



John R. Kasich, Governor  
 Mary Taylor, Lt. Governor  
 Craig W. Butler, Director

8/20/2015

Certified Mail

Melissa Hamsher  
 E2 Ohio Compression LLC - Hayes  
 2121 Old Gatesburg Road, Suite 110  
 State College, PA 16803

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0630005039  
 Permit Number: P0117957  
 Permit Type: Initial Installation  
 County: Guernsey

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

**How to appeal this permit**

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
 77 South High Street, 17th Floor  
 Columbus, OH 43215

## **How to save money, reduce pollution and reduce energy consumption**

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: [www.ohioairquality.org/clean\\_air](http://www.ohioairquality.org/clean_air)

## **How to give us feedback on your permitting experience**

Please complete a survey at [www.epa.ohio.gov/survey.aspx](http://www.epa.ohio.gov/survey.aspx) and give us feedback on your permitting experience. We value your opinion.

## **How to get an electronic copy of your permit**

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Southeast District Office at (740)385-8501 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.  
Assistant Chief, Permitting Section, DAPC

Cc: Ohio EPA-SEDO



**FINAL**

**Division of Air Pollution Control  
Permit-to-Install and Operate  
for  
E2 Ohio Compression LLC - Hayes**

Facility ID:	0630005039
Permit Number:	P0117957
Permit Type:	Initial Installation
Issued:	8/20/2015
Effective:	8/20/2015
Expiration:	9/23/2024





**Division of Air Pollution Control**  
**Permit-to-Install and Operate**  
for  
E2 Ohio Compression LLC - Hayes

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**Final Permit-to-Install and Operate**  
E2 Ohio Compression LLC - Hayes  
**Permit Number:** P0117957  
**Facility ID:** 0630005039  
**Effective Date:** 8/20/2015

## Authorization

Facility ID: 0630005039  
Application Number(s): A0052042, A0052331, A0053240, A0053798, A0054000  
Permit Number: P0117957  
Permit Description: Oil and Gas Gathering Facility  
Permit Type: Initial Installation  
Permit Fee: \$4,950.00  
Issue Date: 8/20/2015  
Effective Date: 8/20/2015  
Expiration Date: 9/23/2024  
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

E2 Ohio Compression LLC - Hayes  
21260 Grape Hollow Rd  
Salesville, OH 43778

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

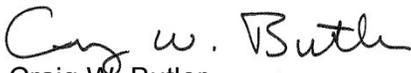
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Southeast District Office  
2195 Front Street  
Logan, OH 43138  
(740)385-8501

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

  
Craig W. Butler  
Director



## Authorization (continued)

Permit Number: P0117957  
 Permit Description: Oil and Gas Gathering Facility

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

- Emissions Unit ID: P017**  
 Company Equipment ID: P017  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable
- Emissions Unit ID: P021**  
 Company Equipment ID: P021  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable
- Emissions Unit ID: P031**  
 Company Equipment ID: P031  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable
- Emissions Unit ID: P032**  
 Company Equipment ID: Cat G350B 690 HP NG engine  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable
- Emissions Unit ID: T002**  
 Company Equipment ID: T002  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable
- Emissions Unit ID: T020**  
 Company Equipment ID: T020  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable

**Group Name: 1680 HP NG Waukesha Engine**

<b>Emissions Unit ID:</b>	<b>P009</b>
Company Equipment ID:	P009
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P010</b>
Company Equipment ID:	P010
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P011</b>
Company Equipment ID:	P011
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P012</b>
Company Equipment ID:	P012
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P013</b>



**Final Permit-to-Install and Operate**  
E2 Ohio Compression LLC - Hayes  
**Permit Number:** P0117957  
**Facility ID:** 0630005039  
**Effective Date:** 8/20/2015

Company Equipment ID:	P013
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P014</b>
Company Equipment ID:	P014
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Final Permit-to-Install and Operate**  
E2 Ohio Compression LLC - Hayes  
**Permit Number:** P0117957  
**Facility ID:** 0630005039  
**Effective Date:** 8/20/2015

## **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 of this permit 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 [DO/LAA] 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.

**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.



**Final Permit-to-Install and Operate**  
E2 Ohio Compression LLC - Hayes  
**Permit Number:** P0117957  
**Facility ID:** 0630005039  
**Effective Date:** 8/20/2015

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

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) See 6. below.
  - 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.
2. Emissions units P002 and P009-P014 contained in this permit are subject to 40 CFR Part 60, Subpart JJJJ. The complete NSPS requirements, including the NSPS General Provisions, may be accessed via the internet from the Electronic Code of Federal Regulation (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the appropriate Ohio EPA District office or local air agency.
3. Emissions unit P021 contained in this permit is subject to 40 CFR Part 63, Subpart HH, the National Emission Standards for Hazardous Air Pollutants (NESHAP) from Oil and Natural Gas Production Facilities. The complete requirements of this rule (including the Part 63 General Provisions) may be accessed via the Internet from the Electronic code of Federal Regulations (e-CFR) website <http://www.ecfr.gov/> or by contacting the appropriate Ohio EPA District Office or Local Air Agency.
4. The Ohio EPA has determined that this facility may be subject to the requirements of an area source MACT/GACT rule that the Ohio EPA does not have the delegated authority to implement. Although Ohio EPA has determined that an area source MACT (also known as the GACT) may apply, at this time Ohio EPA does not have the authority to enforce this standard. Instead, U.S. EPA has the authority to enforce this standard. Please be advised that all requirements associated with these rules are in effect and are enforceable by U.S. EPA. For more information on the area source rules, please refer to the follow U.S. EPA website: <http://www.epa.gov/ttn/atw/area/arearules.html>.
5. Within six months of startup of the facility, the permittee shall collect and analyze a representative sample of the incoming gas and liquids. The permittees shall use the results of the analysis to recalculate the emissions from the various components at the facility utilizing the GRI-GLYCalc or other standard software/emission factors. The permittee shall then compare the results of the revised calculation with the calculations submitted with the air pollution permit applications. If the emissions results are significantly different from those results submitted with the application, then the applicant shall submit the revised calculations to the appropriate District Office or Local Air Authority. The applicant should provide all input data used, the basis for each input value used and the results provided by the program.
6. Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), for this project were not necessary because for the emissions units not exempted from modeling per OEPA Engineering Guide #69, 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 when controlled. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified PTI prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of



**Final Permit-to-Install and Operate**  
E2 Ohio Compression LLC - Hayes  
**Permit Number:** P0117957  
**Facility ID:** 0630005039  
**Effective Date:** 8/20/2015

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 PTIO.



**Final Permit-to-Install and Operate**  
E2 Ohio Compression LLC - Hayes  
**Permit Number:** P0117957  
**Facility ID:** 0630005039  
**Effective Date:** 8/20/2015

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

**1. P017, Equipment Maintenance Blowdown Emissions**

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

Equipment Maintenance Blowdown emissions, based on 6 engines (P009-P014) performing 26 blowdowns per engine per year, emitting a maximum of 936,000scf/yr.

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 operation(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 are identified below. 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), as effective June 30, 2008	Fugitive volatile organic compound (VOC) emissions shall not exceed 0.55 tonper month averaged over a 12-month, rolling period.  See b)(2)(a) below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC emissions from this air contaminant source since the potential to emit is less than 10 tons/year.  See b)(2)(b) below.

- (2) Additional Terms and Conditions
  - a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- c) Operational Restrictions
  - (1) None.
- d) Monitoring and/or Recordkeeping Requirements
  - (1) The permittee shall maintain the following records on a monthly basis:
    - a. The date and number of each maintenance blowdown event;
    - b. VOC emitted from each maintenance blowdown event in pounds; and
    - c. Total VOC emitted from all maintenance blowdown event in tons/month averaged over a twelve-month rolling period.
- e) Reporting Requirements
  - (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
  - (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency 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 Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emissions Limitation:  
  
Fugitive VOC emissions shall not exceed 0.55 tonper month averaged over a 12-month, rolling period.



Applicable Compliance Method:

The monthly VOC emissions limitation was based upon the following calculation using the inputs provided in the permittee's application):

(VOC estimate in pounds for each blowdown event for engines P009-P014) X (# of blowdown events per year for all engines) X (year/12 months) (ton/2,000 lb)

= (84.31 lbs/blowdown event<sup>1</sup>) X (156 blowdown events/year<sup>1</sup>) X (year/12 months) X (1 ton/2,000 lb)

= 0.55 ton per month averaged over a 12-month, rolling period.

Compliance with the emission limitation shall be determined using the above calculation and the records required by d)(1).

g) Miscellaneous Requirements

(1) None.

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<sup>1</sup> From permittee's application

**2. P021, Dehydration system**

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

Dehydration system including a contact tower and glycol dehydration unit, reboiler, (maximum of 80 MMscf/day of gas) and gas-condensate-glycol (GCG) separator (flash separator); vented to a BTEX Elimination System with 100% capture and 95% control efficiency for VOC.

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 operation(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 are identified below. 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), as effective June 30, 2008	Install a dehydration unit, designed for 100% capture and 95% control of emissions of Volatile Organic Compounds (VOC) emissions (excludes methane and ethane), each equipped with Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Elimination Control Systems  See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the calculated annual emission rate is less than 10 tons/yr taking into account the voluntary restriction from OAC rule 3745-31-05(E).

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)(b) below.
c.	OAC rule 3745-31-05(E)	VOC emissions shall not exceed 6.3 tons/year.  Install and operate a dehydration system equipped with a BTEX system, designed for 100% capture and 95% control of VOC. Still vent gases shall be utilized as fuel for the reboiler.
d.	40 CFR Part 63, Subpart HH (40 CFR 63.760-63.779)  [In accordance with 40 CFR 63.760(a)(2)-(3), this emissions unit processes, upgrades, or stores natural gas or hydrocarbon liquids prior to the point of custody transfer from the facility.]	See b)(2)c. below.
e.	40 CFR 63.1-15 (40 CFR 63.764)	Table 2 of Subpart HH of 40 CFR Part 63 shows which parts of the General Provisions in 40 CFR 63.1-15 apply.

(2) Additional Terms and Conditions

- a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- c. The dehydration units controlled by the BTEX Elimination Systems and located at this facility are subject to 40 CFR Part 63, Subpart HH, National Emission Standards for Hazardous Air Pollutants (NESHAP) From Oil and Natural Gas Production Facilities. The dehydration units at this facility are exempt per 63.764(e)(ii) from the requirements of 63.764(d)(2) due to the actual average emission of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year, as determined by the procedures specified in 63.772(b)(2) of 40 CFR Part 63, Subpart HH.

c) Operational Restrictions

- (1) The BTEX elimination system(s) shall be operated at all times when gases are vented to it; still vent gases shall be routed to the re-boiler and shall be used as the primary fuel for the reboiler.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall:
  - a. continuously monitor and record the vapor outlet temperature of the condenser; and
  - b. record all periods of time when the condenser is not operating correctly to control the emissions from the dehydration still vent.
- (2) The permittee shall comply with the applicable recordkeeping requirements required under 40 CFR Part 63, Subpart HH, including the following sections:

63.774(d)	Record the actual annual benzene emissions calculated as provided by rule.
63.760(a)(1)(ii)	Annual throughput records

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency 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.
- (3) The permittee shall comply with the applicable reporting requirements required under 40 CFR Part 63, Subpart HH, including the following sections:

63.764(b)	Where to send reports
63.775(c)	Report information required
63.775(d)(10)	Statement of compliance required
63.775(e)(i)-(e)(iii)	Periodic reports required; due dates of reports
63.775(g)(2)	Submit testing reports per rule

63.775(f)	Process change notification
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f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Design Efficiency:

Install a dehydration unit, designed for 100% capture and 95% control of emissions of VOC emissions (excludes methane and ethane), each equipped with BTEX Elimination Control Systems for VOC.

Applicable Compliance Method:

Compliance is demonstrated by the manufacturer’s guaranteed specifications for 100% capture and 95% control efficiency.

b. Emissions Limitation:

VOC emissions shall not exceed 6.3 tons/year.

Applicable Compliance Method:

The permittee may determine the VOC emissions (excludes methane and ethane) using the GRI-GLYCalc™ model, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit(s) and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled “Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions” (GRI-95/0368.1).

Install a dehydration unit, designed for 100% capture and 95% control of emissions of Volatile Organic Compounds (VOC) emissions (excludes methane and ethane), each equipped with Benzene, Toluene, Ethyl, and Xylene (BTEX) Elimination Control Systems

The VOC emissions limitation is based on a VOC destruction efficiency of ≥ 95% and the worst case pollutant concentrations from representative gas analysis of the inlet gas, as presented in the permittee’s application.

g) Miscellaneous Requirements

(1) None.

**3. P031,CAT G3512TALE NG 860 hp flash gas compressor**

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

One CAT G3512TALE 860 hp natural-gas-fired four-stroke, lean burn stationary flash-gas compressor engine, equipped with an oxidation catalyst to control CO emissions at 93% and control VOC emissions at 50%, manufactured 9/17/1997.

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 operation(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 are identified below. 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) and ORC 3704.03(T)	Nitrogen oxide emissions (NO <sub>x</sub> ) emissions shall not exceed 1.04 tons per month averaged over a 12-month, rolling period.
b.	OAC rule 3745-31-05(A)(3), as effective June 30, 2008	Install an engine designed to meet 0.15 g CO/hp-hr and 0.24 g VOC/hp-hr.  PE emissions shall not exceed 0.00018 tons per month averaged over a 12-month, rolling period.  See b)(2)a. below.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) does not apply to the VOC, PE or SO <sub>2</sub> emissions from this air

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		contaminant source since the potential to emit is less than 10 tons/year.  The BAT requirements under OAC rule 3745-31-05(A)(3) does not apply to the CO emissions from this air contaminant source since the calculated annual emissions rate is less than 10 tons/yr OAC rule 3745-31-05(A)(3)(a)(ii), taking into account the voluntary restriction from OAC rule 3745-31-05(E).  See b)(2)(b) below.
d.	OAC rule 3745-31-05(E), as effective June 30, 2008	CO emissions shall not exceed 1.22 tons/year.  Install and operate an engine with an oxidation catalyst or equivalent control to reduce CO emissions by 93%.
e.	OAC rule 3745-17-11(B)(5)(b)	Particulate Emissions (PE) shall not exceed 0.062 lb/MMBtu actual heat input.
f.	OAC rule 3745-17-07(A)(1)	Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule.

(2) Additional Terms and Conditions

- a. This BAT emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.
- (2) The permittee shall maintain the engine in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modifications deemed necessary by the permittee.
- (3) In the event the engine is not operating in accordance with the manufacturer's recommendations, instructions, or operating manual, with any modifications deemed

necessary by the permittee, the engine shall be expeditiously repaired or otherwise returned to these documented operating conditions.

d) **Monitoring and/or Recordkeeping Requirements**

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (2) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, or operating manuals for the engine, along with documentation of any modifications deemed necessary by the permittee. These documents shall be maintained at the facility and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.
- (3) The permittee shall conduct periodic inspections of the engine to determine whether it is operating in accordance with the manufacturer's recommendations, instructions, or operating manuals with any modifications deemed necessary by the permittee or operator. These inspections shall be performed at a frequency that shall be based upon the recommendation of the manufacturer and the permittee shall maintain a copy of the manufacturer's recommended inspection frequency and it shall be made available to the Ohio EPA upon request.
- (4) In addition to the recommended periodic inspections, not less than once each calendar year the permittee shall conduct a comprehensive inspection of the engine and perform any needed maintenance and repair to ensure that it is operated in accordance with the manufacturer's recommendations.
- (5) The permittee shall document each inspection (periodic and annual) of the engine and shall maintain the following information:
  - a. the date of the inspection;
  - b. a description of each/any problem identified and the date it was corrected;
  - c. a description of any maintenance and repairs performed; and
  - d. the name of person who performed the inspection.

These records shall be maintained at the facility for not less than five years from the date the inspection and any necessary maintenance or repairs were completed and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.

- (6) The permittee shall maintain a record of all operations during which the engine was not operated according to the manufacturer's recommendations with any documented modifications made by the permittee. These records shall be maintained for a period of not less than five years and shall be made available to the Ohio EPA upon request.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs. The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency 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 Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 1.04 tons per month averaged over a 12-month, rolling period.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{NO}_x(\text{Tons/month}) &= \text{emission factor X engine hp X 1lb/454 g X 1 ton/2,000 lbs} \\
 &\quad \text{X 8,760 hours of operation/yr X 1 yr/12 month} \\
 &= 1.5 \text{ g/hp-hr}^2 \text{ X } 860 \text{ hp}^2 \text{ X } 1 \text{ lb/454 g X } 8,760 \text{ hours of} \\
 &\quad \text{operation/yr X 1 ton/2,000 lbs X 1 yr/12 month} \\
 &= 1.04 \text{ tons per month averaged over a 12-month, rolling} \\
 &\quad \text{period.}
 \end{aligned}$$

b. Design Efficiency:

Install an engine designed to meet 0.15 g CO/hp-hr and 0.24 g VOC/hp-hr.

Applicable Compliance Method:

Compliance is demonstrated by the engine manufacturer's design efficiency of 0.15 g CO/hp-hr and 0.24 g VOC/hp-hr.

<sup>2</sup> From IAC Acoustic Catalyst Spec sheet, as submitted in application



c. Emissions Limitation:

PE emissions shall not exceed 0.00018 ton per month averaged over a 12-month, rolling period.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$PE_{(Ton/mo)} = \frac{(7,576 \text{ BTU}/hp\text{-hr}^3)(0.0000771 \text{ lb}/1,000,000 \text{ Btu}^4) \times (860 \text{ hp})}{\text{hp} \times (\text{ton}/2,000 \text{ lb}) \times (730 \text{ hrs}/\text{mo})}$$

$$= 0.00018 \text{ ton}/\text{month}$$

d. Emissions Limitation:

CO emissions shall not exceed 1.22 tons/year.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$CO_{(Tons/yr)} = \text{emission factor} \times \text{engine hp} \times 1 \text{ lb}/454 \text{ g} \times 1 \text{ ton}/2,000 \text{ lbs} \times 8,760 \text{ hours of operation}/\text{yr} \times \text{catalyst reduction factor}$$

$$= 2.1 \text{ g}/hp\text{-hr}^5 \times 860 \text{ hp} \times 1 \text{ lb}/454 \text{ g} \times 1 \text{ ton}/2,000 \text{ lbs} \times 8,760 \text{ hours of operation}/\text{yr} \times (1-.93^5)$$

$$= 1.22 \text{ tons}/\text{year}$$

e. Emissions Limitation:

PE shall not exceed 0.062 pound/MMBtu 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". Alternative US EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

<sup>3</sup> From permittee's application

<sup>4</sup> AP 42, Uncontrolled Emissions for 4-Stroke Lean-Burn Engines, Table 3.2-2, 7/00

<sup>5</sup> From IAC Acoustic Catalyst Spec sheet, as submitted in application



f. Emissions Limitation:

Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

g) Miscellaneous Requirements

(1) None.

**4. P032, Caterpillar G3508 690 HP Natural Gas Engine**

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

Caterpillar G3508B 690 HP, 4-stroke, lean burn, natural gas-fired stationary flash-gas compressor engine, equipped with an oxidation catalyst (OC) technology to control CO emissions at 22.5% and control Formaldehyde emissions at 76%, manufactured 6/10/2014.

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 operation(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 are identified below. 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) and ORC 3704.03(T)	Install an engine designed to meet 2.00 g carbon monoxide (CO)/bhp-hr.
b.	OAC rule 3745-31-05(A)(3), as effective June 30, 2008	Install an engine designed to meet 0.55 g volatile organic compounds (VOC)/bhp-hr and 0.5 g nitrogen oxide (NO <sub>x</sub> )/bhp-hr.  Particulate emissions (PE) emissions shall not exceed 0.0014 ton per month averaged over a 12-month, rolling period.  See b)(2)(a) below.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) does not apply to the NO <sub>x</sub> , SO <sub>2</sub> , or PE emissions from this air contaminant source since the potential to emit is less than 10 tons/year.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)(b) below.
e.	OAC rule 3745-31-05(E), as effective June 30, 2008	Emissions shall not exceed 4.31 tons of VOC per year.  Install and operate an engine with an OC or equivalent control to reduce Formaldehyde emissions by 76%.
d.	40 CFR Part 60, Subpart JJJJ (40 CFR 60.4230 – 60.4248)  [In accordance with 40 CFR Part 60.4233(e) and 40 CFR Part 60, Subpart JJJJ, Table 1, this emissions unit is a natural gas-fired, stationary spark internal combustion engine ≥500 hp and ≤ 1350 hp, and commenced construction after January 1, 2008]	NO <sub>x</sub> emissions shall not exceed 1.00 g/hp-hr or 82 ppmvd at 15% O <sub>2</sub> .  CO emissions shall not exceed 2.0 g/hp-hr or 270 ppmvd at 15% O <sub>2</sub> .  VOC emissions shall not exceed 0.7 g/hp-hr or 60 ppmvd at 15% O <sub>2</sub> .  [40 CFR Part 60.4233(e) and 40 CFR Part 60, Subpart JJJJ, Table 1]  These emissions limitations for NO <sub>x</sub> , CO and VOC are less stringent than the limitation listed under OAC rule 3745-31-05(A)(3), until such time as U.S. EPA approves OAC 3745-31-05(A)(3)(a)(ii) as part of the Ohio SIP.  See b)(2)c. below.
f.	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 part of the General Provisions in 40 CFR Part 60.1 – 19 apply.
g.	OAC rule 3745-17-11(B)(5)(b)	Particulate Emissions (PE) shall not exceed 0.062 lb/MMBtu actual heat input.
h.	OAC rule 3745-17-07(A)(1)	Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule.

(2) Additional Terms and Conditions

- a. This BAT emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- c. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4236(b)	Installation deadlines
60.4243(b)	Compliance demonstration

c) Operational Restrictions

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

60.4234	Operate and maintain engine in compliance with emission standards over the life of the engine
60.4243(b)	Operation and maintenance requirements for non-certified engines
60.4243(e)	Use of propane for up to 100 hours per year during emergencies

- (3) The permittee shall maintain the engine in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modifications deemed necessary by the permittee.
- (4) In the event the engine is not operating in accordance with the manufacturer's recommendations, instructions, or operating manual, with any modifications deemed necessary by the permittee, the engine shall be expeditiously repaired or otherwise returned to these documented operating conditions.

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (2) The permittee shall comply with the applicable restrictions of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4243(e)	Keep records of propane use
60.4245(a) and (b)	Keep maintenance plan and records of conducted maintenance, and documentation that the engine meets the emissions standards

- (3) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, or operating manuals for the engine, along with documentation of any modifications deemed necessary by the permittee. These documents shall be maintained at the facility and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.
- (4) The permittee shall conduct periodic inspections of the engine to determine whether it is operating in accordance with the manufacturer's recommendations, instructions, or operating manuals with any modifications deemed necessary by the permittee or operator. These inspections shall be performed at a frequency that shall be based upon the recommendation of the manufacturer and the permittee shall maintain a copy of the manufacturer's recommended inspection frequency and it shall be made available to the Ohio EPA upon request.
- (5) In addition to the recommended periodic inspections, not less than once each calendar year the permittee shall conduct a comprehensive inspection of the engine and perform any needed maintenance and repair to ensure that it is operated in accordance with the manufacturer's recommendations.
- (6) The permittee shall document each inspection (periodic and annual) of the engine and shall maintain the following information:
  - a. the date of the inspection;
  - b. a description of each/any problem identified and the date it was corrected;
  - c. a description of any maintenance and repairs performed; and
  - d. the name of person who performed the inspection.

These records shall be maintained at the facility for not less than five years from the date the inspection and any necessary maintenance or repairs were completed and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.

- (7) The permittee shall maintain a record of all operations during which the engine was not operated according to the manufacturer's recommendations with any documented modifications made by the permittee. These records shall be maintained for a period of not less than five years and shall be made available to the Ohio EPA upon request.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs. The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency 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.
- (3) The permittee shall submit notifications and reports to the Ohio EPA, Southeast District Office as required pursuant to 40 CFR Part 60, Subpart JJJJ, per the following sections:

60.4245(c) and 60.7(a)(1)	Submit an initial notification (non-certified engines)
60.4245(d)	Submit performance test copies within 60 days after the test has been completed

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
- a. Design Efficiency and Emissions Limitation:  
Install an engine designed to meet 0.5 g NO<sub>x</sub>/bhp-hr.  
NO<sub>x</sub> emissions shall not exceed 1.0 g/hp-hr or 82 ppmvd at 15% O<sub>2</sub>.  
Applicable Compliance Method:  
Compliance shall be demonstrated based upon the emissions testing requirements specified in f)(2).
- b. Design Efficiency and Emissions Limitation:  
Install an engine designed to meet 0.55 g VOC/bhp-hr.  
VOC emissions shall not exceed 0.7 g/hp-hr or 60 ppmvd at 15% O<sub>2</sub>.



Applicable Compliance Method:

Compliance shall be demonstrated based upon the emissions testing requirements specified in f)(2).

c. Design Efficiency and Emissions Limitation:

Install an engine designed to meet 2.00 g CO/bhp-hr.

CO emissions shall not exceed 2.0 g/hp-hr or 270 ppmvd at 15% O<sub>2</sub>.

Applicable Compliance Methods:

Compliance shall be demonstrated based upon the emissions testing requirements specified in f)(2).

d. Design Efficiency and Emissions Limitation:

Install an engine designed to meet 0.0000771 lb PE/MMBtu.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the emissions testing requirements specified in f)(2).

e. Emissions Limitation:

PE shall not exceed 0.0014 ton per month averaged over a 12-month, rolling period.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$PE_{(Ton/mo)} = \frac{(7,254 \text{ BTU/hp-hr}^6)(0.0000771 \text{ lb}/1,000,000 \text{ Btu}^7) \times (690 \text{ hp}^{\text{Error! Bookmark not defined.}})}{(\text{ton}/2,000 \text{ lb}) \times (730 \text{ hrs/mo})}$$

$$= 0.0014 \text{ ton/month}$$

f. Emissions Limitation:

PE shall not exceed 0.062 lb/MMBtu 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

<sup>6</sup> From permittee's application

<sup>7</sup> AP 42, Uncontrolled Emissions for 4-Stroke Lean-Burn Engines, Table 3.2-2, 7/00

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, Southeast District Office.

g. Emissions Limitation:

Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

(2) The permittee shall comply with the applicable restrictions of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4243(e)	Conduct performance test if propane is used in excess of 100 hours/year
60.4244	Procedures for performance testing
60.4245(b) and (b)(2)(ii)	Initial performance and subsequent performance test schedule

When purchasing a non-certified engine, the permittee shall demonstrate compliance with the emission standards specified in 40 CFR 60.4233(e) and according to the requirements specified in 40 CFR 60.4244, as applicable.

The permittee has chosen to demonstrate compliance with the emission standards specified in §60.4233(e) and OAC rule 3745-31-05(A)(3) by performing a stack test, and therefore the permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the procedures specified in 40 CFR 60.4244; 40 CFR Part 60, Subpart JJJJ Table 2; and the following requirements:

- a. An initial performance test shall be performed to demonstrate compliance with the mass emissions limitations and design efficiencies in f)(1)a.-c. of this permit 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 and every 8,760 hours, or 3 years, whichever comes first, thereafter to demonstrate compliance.
- b. If the stationary internal combustion engine is rebuilt, or undergoes major repair or maintenance as defined in 40 CFR Part 60, Subpart A the permittee shall conduct subsequent performance test.
- c. Each performance test must be conducted within 10% of 100% peak (or the highest achievable) load and according to the requirements in 40 CFR 60.8 and

under the specific conditions that are specified by Table 2 of 40 CFR Part 60, Subpart JJJJ.

- d. 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, Southeast 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, Southeast District Office's refusal to accept the results of the emission test(s).
  - e. Personnel from the Ohio EPA, Southeast 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.
  - f. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Southeast District Office within 30 day s 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, Southeast District Office.
- g) Miscellaneous Requirements
- (1) None.

**5. T002, Load-out station controlled by a flare**

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

a) Load-out station including four 500 bbl condensate storage tanks (total throughput 2,555,000bbls/yr) and three 500 bbl produced water storage tanks (total throughput 1,277,865bbl/yr), and truck load-out controlled by one enclosed ground level flare (8MMBtu/hr maximum heat input and 0.05 MMBtu/hr pilot) with 100% capture and 98% control efficiency for VOC emissions.

(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 operation(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 are identified below. 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), as effective June 30, 2008	Install a capture and control system with 100% capture and a minimum of 98% control efficiency for Volatile organic compound (VOC) emissions.  Nitrogen oxide (NO <sub>x</sub> ) emissions from the flare shall not exceed 0.20 ton per month averaged over a 12-month, rolling period.  See b)(2)(a) below.
b.	OAC rule 3745-31-05(A)(3) and ORC 3704.03(T)	Carbon monoxide (CO) emissions shall not exceed 1.08 tons per month averaged over a 12-month, rolling period.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to NO <sub>x</sub> emissions from this air contaminant source since the

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>calculated annual emission rate is less than 10 tons/yr.</p> <p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC emissions from this air contaminant source since the calculated annual emission rate is less than 10 tons/yr taking into account the voluntary restriction from OAC rule 3745-31-05(E).</p> <p>See b)(2)(b) below.</p>
d.	OAC rule 3745-31-05(E), as effective June 30, 2008	<p>Emissions shall not exceed 4.94 tons of VOC per year.</p> <p>Install and operate a capture and control system with 100% capture and a minimum of 98% control efficiency for VOC emissions.</p>
e.	<p>40 CFR 60, Subpart OOOO (60.5360-60.5430)</p> <p>[In accordance with 60.5365(e), this emissions unit constitutes four storage vessels that are located at an affected crude oil and natural gas production, transmission, and distribution facility.]</p>	<p>Each tank at this facility has a potential to emit less than six TPY and are therefore exempt from the requirements of 40 CFR Part 60, Subpart OOOO.</p> <p>Following the compliance date of October 15, 2013, each storage vessel constructed, modified, or reconstructed after August 23, 2011 and with VOC emissions calculated to exceed six TPY shall reduce VOC emissions by 95% or greater.</p>
f.	40 CFR Part 60, Subpart A (60.1-60.19)	General provisions may apply.

(2) Additional Terms and Conditions

- a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c) Operational Restrictions

- (1) The permittee shall operate the flare at all times the tanks and load-out are in operation for the control of VOC emissions and shall maintain the flare in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modification deemed necessary by the permittee.
- (2) In the event the flare is not operating in accordance with the manufacturer's recommendations, instructions, or operating manual, with any modifications deemed necessary by the permittee, the control device shall be expeditiously repaired or otherwise returned to these documented operating conditions.
- (3) Prior to connecting the condensate transfer line(s) from the condensate tank to the condensate tank truck, the permittee shall inspect all fittings, valves, gaskets and fasteners that will be used during the transfer to ensure they are in proper condition (i.e., not corroded, torn, worn, stripped or otherwise damaged) and will result in vapor tight connections.
- (4) During the loading of condensate from the condensate tank to the condensate tank truck, the permittee shall continually monitor the transfer equipment, the condensate tank and the tank truck for any leaks through visual, olfactory, or other observations. If any leak is detected, loading of the condensate shall cease until the leaking component has been repaired.
- (5) The permittee shall not permit condensate to be spilled, discarded in sewers, stored in open containers or handled in any other manner that would result in evaporation.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, or operating manuals for the flare, along with documentation of any modifications deemed necessary by the permittee. These documents shall be maintained at the facility and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.
- (2) The permittee shall conduct periodic inspections of the flare to determine whether it is operating in accordance with the manufacturer's recommendations, instructions, or operating manuals with any modifications deemed necessary by the permittee or operator. These inspections shall be performed at a frequency that shall be based upon the recommendation of the manufacturer and the permittee shall maintain a copy of the manufacturer's recommended inspection frequency, and it shall be made available to the Ohio EPA upon request.
- (3) In addition to the recommended periodic inspections, not less than once each calendar year, the permittee shall conduct a comprehensive inspection of the flare while the emissions unit is shut down and perform any needed maintenance and repair to ensure that it is operated in accordance with the manufacturer's recommendations.

- (4) The permittee shall document each inspection (periodic and annual) of the flare and shall maintain the following information:
- a. The date of the inspection;
  - b. A description of each/any problem identified and the date it was corrected;
  - c. A description of any maintenance and repairs performed; and
  - d. The name of the person who performed the inspection.

These records shall be maintained at the facility for not less than five years from the date the inspection and any necessary maintenance or repairs were completed and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.

- (5) The permittee shall maintain records that document any time periods when the flare was not in service when the emissions unit(s) was/were in operation, as well as a record of all operations during which the flare was not operated according to the manufacturer's recommendations with any documented modifications made by the permittee. These records shall be maintained for a period of not less than five years and shall be made available to the Ohio EPA upon request.
- (6) The permittee shall maintain monthly records of the following information:
- a. for condensate transfer operations, the permittee shall maintain a record of the following information:
    - i. the date any leak was detected;
    - ii. the findings of the inspection for the leak, which shall indicate the location, nature, and severity of the leak;
    - iii. the leak detection method;
    - iv. the corrective action(s) taken to repair each leak and the date of final repair; and
    - v. the inspector's name and signature.

These records shall be retained for a period of five years from the date the record was created.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency 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 Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Design Efficiency:

Install a capture and control system with 100% capture and a minimum of 98% control efficiency for VOC emissions.

Applicable Compliance Method:

Compliance is demonstrated by the flare manufacturer's design efficiency with at least 100% capture and 98% control efficiency for VOC emissions.

b. Emissions Limitation:

CO emissions from the flare shall not exceed 1.08 tons/month as a rolling, 12-month average.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{CO (Tons/month)} &= \text{the maximum heat input rating of the combustion unit X} \\
 &\quad \text{emission factor X 8,760 hours of operation per year X 1} \\
 &\quad \text{ton/2,000 lbs X year/12 months} \\
 &= 8.05 \text{ MMBtu/hr}^1 \text{ X } 0.37 \text{ lb/MMBtu}^8 \text{ X } 8,760 \text{ hrs/yr X } 1 \\
 &\quad \text{ton/2,000 lbs X year/12 months} \\
 &= 1.08 \text{ tons/month}
 \end{aligned}$$

c. Emissions Limitation:

NO<sub>x</sub> emissions from the flare shall not exceed 0.20 ton/month as a rolling, 12-month average.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{NO}_x \text{ (Tons/month)} &= \text{the maximum heat input rating of the combustion unit X} \\
 &\quad \text{emission factor X 8,760 hours of operation per year X 1} \\
 &\quad \text{ton/2,000 lbs X year/12 months}
 \end{aligned}$$

<sup>8</sup> AP 42, Table 13.5-1, Emission factors for industrial flares



$$= 8.05 \text{ MMBtu/hr}^9 \times 0.068 \text{ lb/MMBtu}^8 \times 8,760 \text{ hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs} \times \text{year}/12 \text{ months}$$

$$= 0.20 \text{ tons/month}$$

d. Emissions Limitation:

Emissions shall not exceed 4.94 tons of VOC per year.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\text{VOC (Tons/year)} = \text{the maximum heat input rating of the combustion unit} \times \text{emission factor} \times 8,760 \text{ hours of operation per year} \times 1 \text{ ton}/2,000 \text{ lbs}$$

$$= 8.05 \text{ MMBtu/hr}^{10} \times 0.14 \text{ lb/MMBtu}^{11} \times 8,760 \text{ hr/yr} \times 1 \text{ ton}/2,000 \text{ lbs}$$

$$= 4.94 \text{ tons/year}$$

g) Miscellaneous Requirements

(1) None.

<sup>9</sup> From permittee's application

<sup>10</sup> From Permittee's Application

<sup>11</sup> AP 42, Table 13.5-1, Emission factors for industrial flares

**6. T020, Gathering station controlled by two flares**

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

Gathering station including ten 500 bbl condensate storage tanks (total throughput 2,555,000 bbls/yr), and five 500 bbl produced water storage tanks (total throughput 1,277,500bbl/yr) VOC emissions controlled by two enclosed ground level flares (8MMBtu/hr maximum heat input and 0.05 MMBtu/hr pilot for each flare) with 100% capture and 98% control efficiency for VOC emissions.

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)c., b)(1)d.

(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 operation(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 are identified below. 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.	ORC 3704.03(T) and OAC rule 3745-31-05(A)(3)	Carbon monoxide (CO) emissions from the two flares combined shall not exceed 2.17 tons/month as a rolling, 12-month average.
b.	OAC rule 3745-31-05(A)(3), as effective June 30, 2008	NO <sub>x</sub> emissions from the 2 flares combined shall not exceed 0.40 ton/month as a rolling, 12-month average.  Install a capture and control system (2 flares) designed to achieve 100% capture and a minimum of 98% control efficiency for Volatile organic compound (VOC) emissions.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)(a) below.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to NO<sub>x</sub> from this air contaminant source since the potential to emit is less than 10 tons/yr.</p> <p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC emissions from this air contaminant source since the calculated annual emission rate is less than 10 tons/yr taking into account the voluntary restriction from OAC rule 3745-31-05(E).</p> <p>See b)(2)(b) below.</p>
d.	OAC rule 3745-31-05(E), as effective June 30, 2008	<p>VOC emissions shall not exceed 9.87 tons per year.</p> <p>Install a capture and control system (2 flares) designed to achieve 100% capture and a minimum of 98% control efficiency for VOC emissions.</p>
e.	<p>40 CFR 60, Subpart OOOO (60.5360-60.5430)</p> <p>[In accordance with 60.5365(e), this emissions unit constitutes storage vessels that are located at an affected crude oil and natural gas production, transmission, and distribution facility.]</p>	<p>Each tank at this facility has a potential to emit less than six TPY and are therefore exempt from the requirements of 40 CFR Part 60, Subpart OOOO.</p> <p>Following the compliance date of October 15, 2013, each storage vessel constructed, modified, or reconstructed after August 23, 2011 and with VOC emissions calculated to exceed six TPY shall reduce VOC emissions by 95% or greater.</p>
f.	40 CFR Part 60, Subpart A (60.1-60.19)	General provisions may apply.

(2) Additional Terms and Conditions

- a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c) Operational Restrictions

- (1) The permittee shall operate the flare(s) at all times the tanks are in operation for the control of VOC emissions and shall maintain the flare(s) in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modification deemed necessary by the permittee.
- (2) In the event the flare(s) is(are) not operating in accordance with the manufacturer's recommendations, instructions, or operating manual, with any modifications deemed necessary by the permittee, the control device shall be expeditiously repaired or otherwise returned to these documented operating conditions.
- (3) Organic vapors released from the stabilized condensate storage tanks shall be vented and controlled at all times by the flare(s).
- (4) The permittee shall operate the flare(s) at all times in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modification deemed necessary by the permittee.
- (5) The permittee shall install and operate a system to automatically close the shut-down valves for the condensate inlet line(s) to the stabilized condensate tanks in order to prevent the tank(s) from uncontrolled venting. This system shall continuously monitor the tank pressure, the liquid level or both.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, or operating manuals for the flare(s), along with documentation of any modifications deemed necessary by the permittee. These documents shall be maintained at the facility and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.
- (2) The permittee shall conduct periodic inspections of the flare(s) to determine whether it is operating in accordance with the manufacturer's recommendations, instructions, or operating manuals with any modifications deemed necessary by the permittee or operator. These inspections shall be performed at a frequency that shall be based upon the recommendation of the manufacturer and the permittee shall maintain a copy of the manufacturer's recommended inspection frequency, and it shall be made available to the Ohio EPA upon request.
- (3) In addition to the recommended periodic inspections, not less than once each calendar year, the permittee shall conduct a comprehensive inspection of the flare(s) while the emissions unit is shut down and perform any needed maintenance and repair to ensure that it is operated in accordance with the manufacturer's recommendations.

- (4) The permittee shall document each inspection (periodic and annual) of the flare(s) and shall maintain the following information:
- a. The date of the inspection;
  - b. A description of each/any problem identified and the date it was corrected;
  - c. A description of any maintenance and repairs performed; and
  - d. The name of the person who performed the inspection.

These records shall be maintained at the facility for not less than five years from the date the inspection and any necessary maintenance or repairs were completed and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.

- (5) The permittee shall maintain records that document any time periods when the flare(s) were not in service when the emissions unit was in operation, as well as a record of all operations during which the flare(s) were not operated according to the manufacturer's recommendations with any documented modifications made by the permittee. These records shall be maintained for a period of not less than five years and shall be made available to the Ohio EPA upon request.
- (6) The permittee shall collect a pressurized condensate sample within 30 days of permit issuance and perform a detailed gas analysis in order to determine the VOC and hazardous air pollutant (HAP) composition. This sampling shall be repeated on a semiannual basis.
- (7) The permittee shall record the following information on a monthly basis:
- a. The number of valve shutdowns from the inlet separator that result from the condensate tank pressure or condensate liquid level reaching the value established in b)(7), including the date and time, duration and reason; and
  - b. The number of uncontrolled releases to the atmosphere that result from the condensate tank pressure or condensate liquid level exceeding the values established in b)(7). Details of these releases shall be immediately provided to the Ohio EPA per OAC rule 3745-15-06(B).
- (8) The permittee shall properly install, operate, and maintain a continuous pressure monitor and recorder that measure and record the pressure and/or the liquid level within the condensate tank when the emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the pressure/liquid level on a continuous basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. These records shall be maintained for a period of no less than 5 years. These records can be kept electronically, provided they can be made available to the appropriate Ohio EPA District Office or local air agency.

- (9) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder that measure and record the temperature of the flare stack when the organic vapors are being routed to the flare, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. These records shall be maintained for a period of no less than 5 years. These records can be kept electronically, provided they can be made available to the appropriate Ohio EPA District Office or local air agency.
- (10) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, or operating manuals for the flares, along with documentation of any modifications deemed necessary by the permittee. These documents shall be maintained at the facility and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.
- e) Reporting Requirements
- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency 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 Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
- a. Design Efficiency:
- Install a capture and control system (2 flares) with 100% capture and a minimum of 98% control efficiency for VOC emissions.
- Applicable Compliance Method:
- Compliance is demonstrated by the flare manufacturer's design efficiency with at least 100% capture and 98% control efficiency for VOC emissions.
- b. Emissions Limitation:
- CO emissions from the 2 flares combined shall not exceed 2.17 tons/month as a rolling, 12-month average.



Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{CO (Tons/month)} &= \text{the maximum heat input rating of the combustion unit/flare} \\
 &\quad \times \text{number of flares} \times \text{emission factor} \times 8,760 \text{ hours of} \\
 &\quad \text{operation per year} \times 1 \text{ ton}/2,000 \text{ lbs} \times \text{year}/12 \text{ months} \\
 &= 8.05 \text{ MMBtu/hr/flare}^{12} \times 2 \text{ flares} \times 0.37 \text{ lb/MMBtu}^{13} \times 8,760 \\
 &\quad \text{hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs} \times \text{year}/12 \text{ months} \\
 &= 2.17 \text{ tons/month}
 \end{aligned}$$

c. Emissions Limitation:

NO<sub>x</sub> emissions from the 2 flares combined shall not exceed 0.40 ton/month as a rolling, 12-month average.

Applicable Compliance Method:

NO<sub>x</sub> emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{NO}_x \text{ (Tons/month)} &= \text{the maximum heat input rating of the combustion unit/flare} \\
 &\quad \times \text{number of flares} \times \text{emission factor} \times 8,760 \text{ hours of} \\
 &\quad \text{operation per year} \times 1 \text{ ton}/2,000 \text{ lbs} \times \text{year}/12 \text{ months} \\
 &= 8.05 \text{ MMBtu/hr/flare} \times 2 \text{ flares} \times 0.068 \text{ lb/MMBtu}^8 \times 8,760 \\
 &\quad \text{hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs} \times \text{year}/12 \text{ months} \\
 &= 0.40 \text{ ton/month}
 \end{aligned}$$

d. Emissions Limitation:

VOC emissions shall not exceed 9.87 tons per year.

Applicable Compliance Method:

VOC emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{VOC(Tons/year)} &= \text{the maximum heat input rating of the combustion unit/flare} \\
 &\quad \times \text{number of flares} \times \text{emission factor} \times 8,760 \text{ hours of} \\
 &\quad \text{operation per year} \times 1 \text{ ton}/2,000 \text{ lbs} \\
 &= 8.05 \text{ MMBtu/hr/flare}^{14} \times 2 \text{ flares} \times 0.14 \text{ lb/MMBtu}^{15} \times 8,760 \\
 &\quad \text{hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs}
 \end{aligned}$$

<sup>12</sup> From permittee's application

<sup>13</sup> AP 42, Table 13.5-1, Emission factors for industrial flares

<sup>14</sup> From permittee's application

<sup>15</sup> AP 42, Table 13.5-1, Emission factors for industrial flares



**Final Permit-to-Install and Operate**  
E2 Ohio Compression LLC - Hayes  
**Permit Number:** P0117957  
**Facility ID:** 0630005039  
**Effective Date:** 8/20/2015

= 9.87tons per year

- g) Miscellaneous Requirements
  - (1) None.

**7. Emissions Unit Group -1680 HP NG Waukesha Engine: P009,P010,P011,P012,P013,P014**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
P009	Waukesha L7044GSI 1680 HP 4-stroke rich burn, natural gas-fired stationary compressor engine, equipped with non-selective catalyst reduction (NSCR) technology to control NO <sub>x</sub> emissions at 98%, CO emissions at 98%, and VOC emissions at 90%, manufactured in 2014.
P010	Waukesha L7044GSI 1680 HP 4-stroke rich burn, natural gas-fired stationary compressor engine, equipped with non-selective catalyst reduction (NSCR) technology to control NO <sub>x</sub> emissions at 98%, CO emissions at 98%, and VOC emissions at 90%, manufactured in 2014.
P011	Waukesha L7044GSI 1680 HP 4-stroke rich burn, natural gas-fired stationary compressor engine, equipped with non-selective catalyst reduction (NSCR) technology to control NO <sub>x</sub> emissions at 98%, CO emissions at 98%, and VOC emissions at 90%, manufactured in 2014.
P012	Waukesha L7044GSI 1680 HP 4-stroke rich burn, natural gas-fired stationary compressor engine, equipped with non-selective catalyst reduction (NSCR) technology to control NO <sub>x</sub> emissions at 98%, CO emissions at 98%, and VOC emissions at 90%, manufactured in 2014.
P013	Waukesha L7044GSI 1680 HP 4-stroke rich burn, natural gas-fired stationary compressor engine, equipped with non-selective catalyst reduction (NSCR) technology to control NO <sub>x</sub> emissions at 98%, CO emissions at 98%, and VOC emissions at 90%, manufactured in 2014.
P014	Waukesha L7044GSI 1680 HP 4-stroke rich burn, natural gas-fired stationary compressor engine, equipped with non-selective catalyst reduction (NSCR) technology to control NO <sub>x</sub> emissions at 98%, CO emissions at 98%, and VOC emissions at 90%, manufactured in 2014.

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 operation(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 are identified below. 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), as effective June 30, 2008	Install an engine designed to meet 0.27 g nitrogen oxides (NO <sub>x</sub> )/hp-hr, 0.22 g carbon monoxide (CO)/hp-hr and 0.04 g volatile organic compounds (VOC)/hp-hr.  See b)(2)(a) below.
b.	ORC 3704.03(T) and OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) emissions shall not exceed 0.046 tons per month averaged over a 12-month, rolling period.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC emissions from this air contaminant source since the potential to emit is less than 10 tons/year.  The BAT requirements under OAC rule 3745-31-05(A)(3) do not apply to NO <sub>x</sub> or CO from this air contaminant source since the calculated annual emission rate is less than 10 tons/yr taking into account the voluntary restriction from OAC rule 3745-31-05(E).  See b)(2)(b) below.
d.	OAC rule 3745-31-05(E), as effective June 30, 2008	Emissions shall not exceed 4.31 tons of NO <sub>x</sub> per year and 3.63 tons of CO per year.  Install and operate an engine with an NSCR or equivalent control to reduce NO <sub>x</sub> emissions by 98% and CO emissions by 98%.
e.	40 CFR Part 60, Subpart JJJJ (40 CFR 60.4230 – 60.4248)  [In accordance with 40 CFR Part 60.4230(a), this emissions unit is a natural gas-fired, stationary spark internal combustion engine ≥ 500 HP that commenced construction after June 12, 2006, is manufactured after July 1, 2007 and is subject to the emission limitations and control	NO <sub>x</sub> emissions shall not exceed 1.00 g/hp-hr or 82 ppmvd at 15% O <sub>2</sub> .  CO emissions shall not exceed 2.0 g/hp-hr or 270 ppmvd at 15% O <sub>2</sub> .  VOC emissions shall not exceed 0.7 g/hp-hr or 60 ppmvd at 15% O <sub>2</sub> .  [40 CFR Part 60.4233(e) and 40 CFR Part 60, Subpart JJJJ, Table 1]



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	measures specified in this section.]	<p>These emission limitations for NO<sub>x</sub>, CO, VOC are less stringent than the limitations listed under OAC rule 3745-31-05(A)(3), until such time as U.S. EPA approves OAC 3745-31-05(A)(3)(a)(ii) as part of the Ohio SIP.</p> <p>See b(2)c. below.</p>
f.	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 part of the General Provisions in 40 CFR Part 60.1 – 19 apply.
g.	40 CFR 60, Subpart A (60.1-60.19)	General provisions may apply.
h.	OAC rule 3745-17-11(B)(5)(b)	PE shall not exceed 0.062 lb/MMBtu actual heat input.
i.	OAC rule 3745-17-07(A)(1)	Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule.

(2) Additional Terms and Conditions

- a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- c. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4236(b)	Installation deadlines
60.4243(b)(2)(ii)	Compliance demonstration

c) Operational Restrictions

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

60.4234	Operate and maintain engine in compliance with emission standards over the life of the engine
60.4243(b)(2)(ii)	Operation and maintenance requirements for non-certified engines
60.4243(e)	Use of propane for up to 100 hours per year during emergencies
60.4243(g)	Air-to-fuel ratio controllers requirements

- (3) The permittee shall install and operate the engine with nonselective catalytic reduction for the control of CO, VOC, and NO<sub>x</sub> emissions whenever this emissions unit is in operation and shall maintain the engines in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modifications deemed necessary by the permittee.
- (4) In the event the engine is not operating in accordance with the manufacturer's recommendations, instructions, or operating manual, with any modifications deemed necessary by the permittee, the engine shall be expeditiously repaired or otherwise returned to these documented operating conditions.

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (2) The permittee shall comply with the applicable restrictions of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4243(b)(2)(ii)	Maintain records of maintenance plan and records of maintenance conducted on the engine
60.4243(e)	Keep records of propane use
60.4245(a)	Maintain records of notifications and supporting documentation

- (3) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, operating manuals for the engines, along with documentation of any modifications deemed necessary by the permittee. These documents shall be maintained at the facility and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.

- (4) The permittee shall conduct periodic inspections of the engine to determine whether it is operating in accordance with the manufacturer's recommendations, instructions, or operating manuals with any modifications deemed necessary by the permittee or operator. These inspections shall be performed at a frequency that shall be based upon the recommendation of the manufacturer and the permittee shall maintain a copy of the manufacturer's recommended inspection frequency, and it shall be made available to the Ohio EPA upon request.
- (5) In addition to the recommended periodic inspections, not less than once each calendar year the permittee shall conduct a comprehensive inspection of the engine while the emissions unit is shut down and perform any needed maintenance and repair to ensure that it is operated in accordance with the manufacturer's recommendations.
- (6) The permittee shall document each inspection (periodic and annual) of the engine and shall maintain the following information:
  - a. The date of the inspection;
  - b. A description of each/any problem identified and the date it was corrected;
  - c. A description of any maintenance and repairs performed; and
  - d. The name of the person who performed the inspection.

These records shall be maintained at the facility for not less than five years from the date the inspection and any necessary maintenance or repairs were completed and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.

- (7) The permittee shall maintain records that document any time periods when the nonselective catalytic reduction was not in service when the emissions unit(s) were in operation, as well as a record of all operations during which the engine was not operated according to the manufacturer's recommendations with any documented modifications made by the permittee. These records shall be maintained for a period of not less than five years and shall be made available to the Ohio EPA upon request.
- e) Reporting Requirements
- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
  - (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
  - (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency 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.



- (4) The permittee shall submit notifications and reports to the Ohio EPA, Southeast District Office as required pursuant to 40 CFR Part 60, Subpart JJJJ, per the following sections:

60.4245(c) and 60.7(a)(1)	Submit an initial notification (non-certified engines)
60.4245(d)	Submit performance test copies within 60 days after the test has been completed

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

PE emissions shall not exceed 0.046 ton per month averaged over a 12-month, rolling period.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{PE (Tons/month)} &= (0.0095 \text{ lb/ 1,000,000 BTU}^{16}) \times (7,881 \text{ BTU/hp-hr}^{17}) \times \\
 &\quad (1,680 \text{ hp}^{17}) \times (1 \text{ ton/2,000 lbs}) \times (730 \text{ hr/mo}) \\
 &= 0.046 \text{ tonper month averaged over a 12-month, rolling} \\
 &\quad \text{period.}
 \end{aligned}$$

b. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 0.27 g/hp-hr.

NO<sub>x</sub> emissions shall not exceed 1.00 g/hp-hr or 82 ppmvd at 15% O<sub>2</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the emissions testing requirements specified in f)(2).

c. Emissions Limitation:

CO emissions shall not exceed 0.22 g/hp-hr.

CO emissions shall not exceed 2.0 g/hp-hr or 270 ppmvd at 15% O<sub>2</sub>.

<sup>16</sup> AP-42, Chapter 3, Natural Gas Fired Reciprocating Engines, Table 3.2-3 Uncontrolled Emission Factors for 4-Stroke Rich-Burn Engines, 7/00

<sup>17</sup> From permittee's application



Applicable Compliance Method:

Compliance shall be demonstrated based upon the emissions testing requirements specified in f)(2).

d. Emissions Limitation:

VOC emissions shall not exceed 0.04 g/hp-hr.

VOC emissions shall not exceed 0.7 g/hp-hr or 60 ppmvd at 15% O<sub>2</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the emissions testing requirements specified in f)(2).

e. Emissions Limitation:

Emissions shall not exceed 4.31 tons of NO<sub>x</sub> per year.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{NO}_x \text{ (Tons/year)} &= \text{hp of engine} \times \text{NO}_x \text{ emission factor} \times 1\text{lb}/454 \text{ g} \times 8,760 \\
 &\quad \text{hours of operation per year} \times 1 \text{ ton}/2,000 \text{ lbs} \times \text{control} \\
 &\quad \text{efficiency} \\
 &= 1680 \text{ hp}^{18} \times 13.3 \text{ g}/\text{hp-hr}^{18} \times 1\text{lb}/454 \text{ g} \times 8,760 \text{ hrs}/\text{yr} \times 1 \\
 &\quad \text{ton}/2,000 \text{ lbs} \times (1-.98^{18}) \\
 &= 4.31 \text{ tons/year}
 \end{aligned}$$

f. Emissions Limitation:

Emissions shall not exceed 3.63 tons of CO per year.

Applicable Compliance Method:

The emissions limitation was derived by the following calculation:

$$\begin{aligned}
 \text{CO(Tons/year)} &= \text{hp of engine} \times \text{CO emission factor} \times 1\text{lb}/454 \text{ g} \times 8,760 \\
 &\quad \text{hours of operation per year} \times 1 \text{ ton}/2,000 \text{ lbs} \times \text{control} \\
 &\quad \text{efficiency} \\
 &= 1680 \text{ hp}^{19} \times 11.2 \text{ g}/\text{hp-hr}^{19} \times 1\text{lb}/454 \text{ g} \times 8,760 \text{ hrs}/\text{yr} \times 1 \\
 &\quad \text{ton}/2,000 \text{ lbs} \times (1-.98^{19})
 \end{aligned}$$

<sup>18</sup> From permittee's application

<sup>19</sup> From permittee's application



= 3.63 tons/year

g. Emissions Limitation:

PE shall not exceed 0.062 pound/MMBtu 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". Alternative US EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

h. Emissions Limitation:

Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

(2) The permittee shall comply with the applicable restrictions of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4243(e)	Conduct performance test if propane is used in excess of 100 hours/year
60.4244	Procedures for performance testing
60.4245(b) and (b)(2)(ii)	Initial performance and subsequent performance test schedule

When purchasing a non-certified engine, the permittee shall demonstrate compliance with the emission standards specified in 40 CFR 60.4233(e) and according to the requirements specified in 40 CFR 60.4244, as applicable.

The permittee has chosen to demonstrate compliance with the emission standards specified in §60.4233(e) and OAC rule 3745-31-05(A)(3) by performing a stack test, and therefore the permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the procedures specified in 40 CFR 60.4244; 40 CFR Part 60, Subpart JJJJ Table 2; and the following requirements:

a. An initial performance test shall be performed to demonstrate compliance with the mass emissions limitations and design efficiencies in f)(1)b.-d. of this permit 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 and every 8,760 hours, or 3 years, whichever comes first, thereafter to demonstrate compliance.

- b. If the stationary internal combustion engine is rebuilt, or undergoes major repair or maintenance the permittee shall conduct subsequent performance test.
- c. Each performance test must be conducted within 10% of 100% peak (or the highest achievable) load and according to the requirements in 40 CFR 60.8 and under the specific conditions that are specified by Table 2 of 40 CFR Part 60, Subpart JJJJ.
- d. 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, Southeast 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, Southeast District Office's refusal to accept the results of the emission test(s).
- e. Personnel from the Ohio EPA, Southeast 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.
- f. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Southeast 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, Southeast District Office.

g) Miscellaneous Requirements

- (1) None.