



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

10/7/2015

Mr. Charles Minshew
Pennant Midstream LLC - Hickory Bend Gas Processing Plt
300 Woodcliff Drive
Canonsburg, PA 15317

Certified Mail

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	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: 0250002026
Permit Number: P0119393
Permit Type: OAC Chapter 3745-31 Modification
County: Mahoning

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

How to give us feedback on your permitting experience

Please complete a survey at 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 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, Northeast District Office at (330)963-1200 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-NEDO



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for**

Pennant Midstream LLC - Hickory Bend Gas Processing Plt

Facility ID:	0250002026
Permit Number:	P0119393
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	10/7/2015
Effective:	10/7/2015
Expiration:	6/5/2023



Division of Air Pollution Control
Permit-to-Install and Operate
for
Pennant Midstream LLC - Hickory Bend Gas Processing Plt

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Authorization

Facility ID: 0250002026
Application Number(s): A0053817
Permit Number: P0119393
Permit Description: Chapter 31 modification permit to increase the flare pilot and purge rate allowable rates to align with manufacturer recommendations, make changes to the blowdown emissions, and update the equipment leak counts at a gas processing plant.
Permit Type: OAC Chapter 3745-31 Modification
Permit Fee: \$1,200.00
Issue Date: 10/7/2015
Effective Date: 10/7/2015
Expiration Date: 6/5/2023
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Pennant Midstream LLC - Hickory Bend Gas Processing Plt
6750 E Middletown Rd
Springfield Twp., OH 44442

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, Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087
(330)963-1200

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: P0119393

Permit Description: Chapter 31 modification permit to increase the flare pilot and purge rate allowable rates to align with manufacturer recommendations, make changes to the blowdown emissions, and update the equipment leak counts at a gas processing plant.

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

Emissions Unit ID:	P001
Company Equipment ID:	Controlled Maintenance Blowdown Activities
Superseded Permit Number:	P0113249
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P002
Company Equipment ID:	Uncontrolled Maintenance Blowdown Releases
Superseded Permit Number:	P0113249
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P801
Company Equipment ID:	P801
Superseded Permit Number:	P0117085
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
Pennant Midstream LLC - Hickory Bend Gas Processing Plt
Permit Number: P0119393
Facility ID: 0250002026
Effective Date: 10/7/2015

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.



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) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.
2. Emissions unit P801 contained in this permit is subject to 40 CFR Part 60, Subparts OOOO and VVa. 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.



C. Emissions Unit Terms and Conditions



1. P001, Controlled Maintenance Blowdown Activities

Operations, Property and/or Equipment Description:

Periodic maintenance blowdown activities and emergency releases controlled with an air-assisted open flare with a maximum heat input capacity of 7,730 million BTU per hour but an average operating capacity of 185 million BTU per hour; operated at a maximum of 351,000 standard cubic feet per hour and 28 million standard cubic feet per year of pilot and purge gas plus process maintenance releases combusted in the flare with 98% destruction 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) June 30, 2008	Nitrogen oxides (NO _x) emissions shall not exceed 0.17 ton per month averaged over a twelve-month, rolling period. Carbon monoxide (CO) emissions shall not exceed 0.34 ton per month averaged over a twelve-month, rolling period. Volatile organic compound (VOC) emissions shall not exceed 0.12 ton per month averaged over a twelve-month, rolling period. See b)(2)a.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		The requirements of this rule include compliance with the applicable requirements of 40 CFR Part 60, Subpart OOOO.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NOx, CO and VOC emissions from this air contaminant source since the potentials to emit are less than 10 tons/year. See b)(2)b.
c.	40 CFR Part 60, Subpart OOOO: Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (60.5360-60.5430) [In accordance with 40 CFR 60.5400, this emissions unit consists of a flare used to control leaks from pressure relief devices in a process unit in an onshore natural gas processing plant.] 40 CFR Part 60, Subpart VVa: Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for which construction, reconstruction, or modification commenced after November 7, 2006. (40 CFR 60.18, 60.5400, 60.482-1a(a), (b), and (d), 60.482-10a)	The facility is subject to the applicable requirements of Subpart VVa for equipment leaks of VOC at a facility which commenced construction after August 23, 2011 per 60.5400 of Subpart OOOO. See b)(2)c., b)(2)d., c)(3), d)(7) and e)(3).
d.	40 CFR Part 60.1 through 60.19	The General Provisions that apply are specified in Table 3 of 40 CFR Part 60, Subpart OOOO.
e.	OAC rule 3745-17-07(A)	See b)(2)e.
f.	OAC rule 3745-17-11(B)	See b)(2)f.

(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. No later than October 15, 2012 or upon startup, the permittee shall demonstrate compliance with the applicable requirements of 40 CFR 60.482-1a(a), (b), and (d), 60.482-2a, and 60.482-4a through 60.482-11a, except as provided in 60.5401.
- d. Equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2a to 60.482-10a if it is identified as required in 40 CFR 60.486a(e)(5).
- e. The emissions from the flare are exempt from the visible PE limitations specified in OAC rule 3745-17-07(A), pursuant to OAC rule 3745-17-07(A)(3)(h), because the emissions unit is not subject to the requirements of OAC rule 3745-17-11.
- f. The uncontrolled mass rate of PE from the flare is less than 10 pounds per hour. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11 does not apply because the process weight rate is equal to zero.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.
- (2) All collected gas shall be vented to an open flare designed and operated as follows:
 - a. The flare shall be operated with a 98% destruction efficiency.
 - b. An automatic flame ignition system shall be installed.
 - c. If using a pilot flame ignition system, the presence of a pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame. A pilot flame shall be maintained at all times in the flare's pilot light burner. If the pilot flame goes out and does not relight, then an alarm shall sound. The net heating value of the gas being combusted and the actual exit velocity shall be calculated as required in 40 CFR 60.18.
 - d. If using an electric arc ignition system, the arcing of the electric arc ignition system shall pulse continually and a device shall be installed and used to continuously monitor the electric arc ignition system.
 - e. Any flare, auto ignition system, and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

- f. An inlet gas flow rate meter shall be installed and used to continuously monitor the flow.
 - g. There shall be no visible particulate emissions from the flare, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
 - h. The flare shall operate at no more than a rolling, 12-month average 185 mmBtu/hr heat input at all times except for times when a malfunction occurs such that excess gas must be safely disposed of through the flare.
 - i. The flare shall comply with the applicable requirements of 40 CFR 60.18.
- (3) For the pressure relief devices, the permittee shall comply with the applicable restrictions required under 40 CFR Part 60, Subparts A, OOOO and VVa, including the following sections:

60.5400(a) and 60.482-10a(a) through (d) and (m)	Meet the requirements of 60.482-10a for closed vent systems and control devices.
60.5400(a), 60.482-4a(c), 60.482-10a(a) and (d)	Flares shall comply with the requirements of 40 CFR Part 60 Section 60.18.
60.5400(a) and 60.482-10a(m)	Operate closed vent systems and control devices used to comply with provisions of 40 CFR 60.482-10a at all times when emissions may be vented to them.
60.5400(a) and 60.482-10a(g)	Repair all leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, from the closed vent systems and control devices as soon as practicable. First attempt at repair must be made no later than <u>5 calendar days</u> after detection, and repair must be completed no later than <u>15 calendar days</u> after detection, except as provided by rule (e.g., delay of repair, unsafe to inspect, difficult to inspect).
60.5400(a) and 60.482-10a(h)	Meet the requirements of 60.482-10a(h) for delays of repair.
60.5400(a) and 60.482-10a(i)	Vapor collection systems and closed vent systems operated under a vacuum are exempt from the inspection requirements of 60.482-10a(f).
60.5400(a) and 60.482-10a(j)	Meet the requirements of 60.482-10a(j) for parts of the closed vent system designated as unsafe to inspect in lieu of 60.482-10a(f).



60.5400(a) and 60.482-10a(k)	Meet the requirements of 60.482-10a(k) for parts of the closed vent system designated as difficult to inspect in lieu of 60.482-10a(f).
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*The permittee may choose to comply with any alternative standards provided in 40 CFR Part 60, Subparts A and OOOO.

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 properly install, operate, and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer’s recommendations, instructions, and operating manuals.
- (3) The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design and the requirements contained in this permit.
- (4) The permittee shall maintain the following records on a monthly basis:
 - a. Number of each type of maintenance blowdown event (i.e., each residue filter change out event, each inlet filter change out event, each dust filter change out event, each dehy mole sieve change out event, each demethanizer blowdown event, each liquid filter change out event, each partial plant maintenance shutdown event and each controlled pigging event);
 - b. Total estimated volume of gas emitted from each type of maintenance blowdown event; and
 - c. Total estimated volume of gas emitted from all maintenance blowdown events.
- (5) The permittee shall:
 - a. continuously monitor and record the presence of the pilot flame;
 - b. record all periods during which the automatic flare ignition system (pilot flame or electronic arc ignition system) was not working;
 - c. record all periods during which there was gas being vented to the flare but the flare was not lit;
 - d. record gas flow rate at the inlet to the flare on a continuous basis, in scf;
 - e. record a summation of the gas flow rate at the inlet to the flare monthly, in scf/month; and



- f. record a rolling, 12-month, summation of the gas flow rate at the inlet to the flare monthly, in scf/month.

- (6) The permittee shall maintain a record of all periods of time (date and number of hours) when, due to emergency or upset condition, the flare is burning collected gases such that the rolling, 12-month average heat input is greater than 185 mmBtu/hr, along with a description of the emergency and/or the reason that the flare was used at a rolling, 12-month average heat input greater than 185 mmBtu/hr. The rolling, 12-month average heat input shall be calculated from the monitored flow rate and a maximum heating value of 1.235E-03 mmBtu/scf.

- (7) For the pressure relief devices, the permittee shall comply with the applicable monitoring and record keeping requirements required under 40 CFR Part 60, Subparts A, OOOO and VVa, including the following sections:

60.5400(a), 60.482-10a(e)	Monitor the control device to ensure it is operated and maintained in conformance with its design.
60.5400(a), 60.482-10a(f)(1) and (2), and 60.485a(b)	Inspect each closed vent system, except as provided by rule. If the vapor collection system or closed vent system is constructed of hard-piping, an initial inspection shall be performed according to 60.485a(b) (i.e., Method 21), and annual visual inspections shall be performed for visible, audible, or olfactory indications of leaks. If the vapor collection system or closed vent system is constructed of ductwork, initial and annual inspections shall be performed according to the procedures of 60.485a(b).
60.5400(a) and 60.482-10a(l)(1)	Maintain required records for parts of the closed vent system that are designated as unsafe to inspect.
60.5400(a) and 60.482-10a(l)(2)	Maintain required records for parts of the closed vent system that are designated as difficult to inspect.
60.5400(a) and 60.482-10a(l)(3)	Maintain required records for leaks and repairs of closed vent systems as specified in 60.486a(c).
60.5400(a) and 60.482-10a(l)(4) and (5)	Maintain required records for inspections.
60.5400(e) and 60.486a(d)	Maintain required records for the design requirements for closed vent systems and



	control devices.
60.5400(e) and 60.486a(e)	Maintain required log.
60.5421(b)	Maintain required records for pressure relief devices.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA Northeast District Office 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.
- (2) As part of the annual Permit Evaluation Report (PER), this facility shall identify the following: 1) all periods of time during which the pilot flame was not functioning properly or the flare was not maintained as required in this permit; and 2) all periods of time when, due to emergency or upset conditions, the flare is burning collected gases at greater than the rolling, 12-month average heat input of 185 mmBtu/hr. The reports shall include the date, time, and duration of each such period.
- (3) For the pressure relief devices, the permittee shall comply with the applicable reporting requirements required under 40 CFR Part 60, Subparts A, OOOO and VVa, including the following sections:

60.5400(e) and 60.487a(a)	Submit semiannual reports beginning 6 months after the initial startup date.
60.5400(e) and 60.487a(b) and (c)	Initial and subsequent semiannual report requirements.
60.5422	Submit the required information for pressure relief switches

f) Testing Requirements

- (1) Compliance with the emissions limitations and/or control requirements specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitations:
 NO_x emissions shall not exceed 0.17 ton per month averaged over a twelve-month, rolling period.



Applicable Compliance Method:

Compliance with the allowable NO_x emission limitations above shall be based upon the following calculations using the inputs provided in the permittee's application:

$$\begin{aligned} \text{NO}_x \text{ (ton/mo.)} &= [(\text{pilot light/purge gas heat input (million BTU/yr)} + (\text{flared material heat input (million BTU/yr)})] \times \text{NO}_x \text{ emissions factor (lb/million BTU)} \\ &= [(26,806 \text{ million BTU/yr} + 2,877 \text{ million BTU/yr})] \times 0.138 \\ &\text{lb/million BTU} \\ &= 4,096 \text{ lbs/yr} \times (1 \text{ ton}/2,000 \text{ lbs}) \times (1 \text{ yr}/12 \text{ months}) \\ &= 0.17 \text{ ton/mo.} \end{aligned}$$

Where:

Maximum pilot light/purge gas heat input = 26,806 million BTU/yr;
Maximum flared material heat input = 2,877 million BTU/yr; and
NO_x EF (pilot light/purge gas and flared material) = 0.138 lb/million BTU (TNRCC RG-109 "Air Permits Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers," Table 4).

If required, compliance with the allowable NO_x emission limitation shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 7.

b. Emissions Limitations:

CO emissions shall not exceed 0.34 ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

Compliance with the allowable CO emission limitations above shall be based upon the following calculations using the inputs provided in the permittee's application:

$$\begin{aligned} \text{CO (ton/mo.)} &= [(\text{pilot light/purge gas heat input (million BTU/yr)} + (\text{flared material heat input (million BTU/yr)})] \times \text{CO emissions factor (lb/million BTU)} \\ &= [(26,806 \text{ million BTU/yr} + 2,877 \text{ million BTU/yr})] \times 0.276 \\ &\text{lb/million BTU} \\ &= 8,193 \text{ lbs/yr} \times (1 \text{ ton}/2,000 \text{ lbs}) \times (1 \text{ yr}/12 \text{ months}) \\ &= 0.34 \text{ ton/mo.} \end{aligned}$$

Where:

Maximum pilot light/purge gas heat input = 26,806 million BTU/yr;
Maximum flared material heat input = 2,877 million BTU/yr; and



CO EF (pilot light/purge gas) = 0.276 lb/million BTU (TNRCC RG-109 “Air Permits Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers,” Table 4).

If required, compliance with the allowable CO emission limitation shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 10.

c. Emission Limitation:

VOC emissions shall not exceed 0.12 ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

Compliance with the allowable VOC emission limitations above shall be based upon the following calculation using the inputs provided in the permittee’s application and the record keeping requirements in d)(4):

$$\text{VOC (ton/mo.)} = \text{VOC}_p + \text{VOC}_b$$

Where:

$$\begin{aligned} \text{VOC}_p \text{ (ton/mo.)} &= \text{[(pilot light/purge gas heat input (million BTU/yr) X VOC} \\ &\quad \text{emissions factor (lb/million BTU))]} \\ &= \text{[(26,806 million BTU/yr X 0.0054 lb/million BTU)]} \\ &= \text{145 lbs/yr X (1 ton/2,000 lbs) X (1 yr/12 months)} \\ &= \text{0.006 ton/mo.} \end{aligned}$$

Where:

Maximum pilot light/purge gas heat input = 26,806 million BTU/yr; and
VOC EF (pilot light/purge gas) = 0.0054 lb/million BTU (AP-42 Table 1.4-2, 7/98).

$$\begin{aligned} \text{VOC}_b \text{ (tons/month)} &= \text{[(VOC estimate for each partial plant maintenance} \\ &\quad \text{shutdown event X \# of partial plant maintenance shutdown} \\ &\quad \text{events per month) + (VOC estimate for each residue filter} \\ &\quad \text{change out event X \# of residue filter change out events} \\ &\quad \text{per month) + (VOC estimate for each inlet filter change out} \\ &\quad \text{event X \# of inlet filter change out events per month) +} \\ &\quad \text{[(VOC estimate for each dust filter change out event X \# of} \\ &\quad \text{dust filter change out events per month) + (VOC estimate} \\ &\quad \text{for each dehy mole sieve change out event X \# of dehy} \\ &\quad \text{mole sieve change out events per month) + (VOC estimate} \\ &\quad \text{for each demethanizer blowdown event X \# of} \\ &\quad \text{demethanizer blowdown events per month) + (VOC} \\ &\quad \text{estimate for each liquid filter change out event X \# of liquid} \\ &\quad \text{filter change out events per month) + (VOC estimate for} \\ &\quad \text{each 12" controlled pigging event X \# of 12" controlled} \\ &\quad \text{pigging events per month) + (VOC estimate for each 20"} \end{aligned}$$



$$\text{controlled pigging event X \# of 20"} \text{ controlled pigging events per month) + (VOC estimate for each 24"} \text{ controlled pigging event X \# of 24"} \text{ controlled pigging events per month)] X (1 ton/2,000 pounds) x (1 - control efficiency) = 0.11 ton/mo.}$$

Where:

- VOC estimate for each residue filter change out event = 4 lbs/event.
- VOC estimate for each inlet filter change out event = 132 lbs/event.
- VOC estimate for each dust filter change out event = 50 lbs/event.
- VOC estimate for each dehy mole sieve change out event = 607 lbs/event.
- VOC estimate for each demethanizer blowdown event = 1,819 lbs/event.
- VOC estimate for each liquid filter change out event = 158.83 lbs/event.
- VOC estimate for each 12" controlled pigging event = 18.2 lbs/event.
- VOC estimate for each 20" controlled pigging event = 51.5 lbs/event.
- VOC estimate for each 24" controlled pigging event = 77.7 lbs/event.
- VOC estimate for each partial plant maintenance shutdown = 60,151 lbs/event.
- Flare control efficiency = 98%.

If required, compliance with the allowable VOC emission limitation above shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 18, 25, or 25A.

d. Emission Limitation:

The flare shall be designed and operated with no visible emissions, except for a total of five minutes during any two consecutive hours.

Applicable Compliance Method:

Compliance with the visible emissions limitation shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 22. See f)(2).

- (2) Performance testing shall be conducted as required in 40 CFR Part 60 Subpart A, OOOO and VVa pursuant to 40 CFR 60.18(f)(1), 60.5400 and 60.485a. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 180 days after initial startup of such facility.
 - b. The emissions testing shall be conducted to demonstrate compliance with the visible emission limitations for the flare in accordance with the requirements of 40 CFR 60.485a(g)(1).
 - c. The following test method shall be employed to demonstrate compliance with the allowable emission rate: visible emissions - Method 22 of 40 CFR 60, Appendix A.



- d. The test(s) shall be conducted while the emissions unit is operating under representative operating conditions as specified in 40 CFR 60.8(c), unless otherwise specified or approved by the Ohio EPA Northeast District Office.
- e. No later than thirty (30) days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast 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 Northeast District Office's refusal to accept the results of the emissions test(s).
- f. Personnel from the Ohio EPA Northeast 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.

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

g) **Miscellaneous Requirements**

- (1) Any amendment to 40 CFR Part 60, Subpart OOOO shall supersede the compliance limitations and/or options contained in this permit.

2. P002, Uncontrolled Maintenance Blowdown Releases

Operations, Property and/or Equipment Description:

Uncontrolled maintenance blowdown releases from periodic maintenance blowdown activities from equipment in natural gas service; a maximum of 1,880 standard cubic feet per hour and 1,880 standard cubic feet per year of uncontrolled releases.

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) June 30, 2008	Fugitive volatile organic compound (VOC) emissions shall not exceed 0.07 ton per month averaged over a twelve-month, rolling period. See b)(2)a. and c)(1).
b.	OAC rule 3745-31-05(A)(3)(a)(ii) 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.

(2) Additional Terms and Conditions

- a. The 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).

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 minimize the frequency and size of blowdown events by conducting routine operation and maintenance activities in a manner consistent with safety and good air pollution control practices.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain the following records on a monthly basis:
- a. Number of each type of maintenance blowdown event;
 - b. Total estimated volume of gas emitted from each type of maintenance blowdown event; and
 - c. Total estimated volume of gas emitted from all maintenance blowdown events.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA Northeast District Office 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.

f) Testing Requirements

- (1) Compliance with the emissions limitations and/or control requirements specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:
- a. Emissions Limitation:

Fugitive VOC emissions shall not exceed 0.07 ton per month averaged over a twelve-month, rolling period.



Applicable Compliance Method:

Compliance with the annual allowable VOC emission limitation above shall be based upon the following calculation using the inputs provided in the permittee's application and the recordkeeping requirements in d)(1):

$$\begin{aligned} \text{VOC (tons/mo.)} &= [(\text{VOC estimate for blowdown of refrigerated vapor} \\ &\text{operation} \times \# \text{ of blowdowns of refrigerated vapor operation} \\ &\text{per month}) + (\text{VOC estimate for residue compressor} \\ &\text{blowdown event} \times \# \text{ of residue compressor blowdown} \\ &\text{events per month})] \times 1 \text{ ton}/2,000 \text{ pounds} \\ &= 0.07 \text{ ton/mo.} \end{aligned}$$

Where:

VOC estimate for blowdown of refrigerated vapor operation = 1,591 lbs/event.
VOC estimate for residue compressor blowdown event = 4.4 lbs/event.

- g) Miscellaneous Requirements
 - (1) None.



3. P801, Fugitive Equipment Leaks

Operations, Property and/or Equipment Description:

Fugitive VOC emissions from various equipment components, including valves, pumps, flanges, connectors, open-ended lines, compressors, drains/vents, pressure safety valves and sample points

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) June 30, 2008	Fugitive volatile organic compound (VOC) emissions shall not exceed 0.22 ton per month averaged over a twelve-month, rolling period. The requirements of this rule also include compliance with the requirements of 40 CFR Part 60, Subpart OOOO. See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) 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.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	<p>40 CFR Part 60, Subpart OOOO: Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (60.5360 - 60.5430)</p> <p>[In accordance with 40 CFR 60.5365, this emissions unit includes equipment associated with a liquefied natural gas unit located at an onshore natural gas processing plant.]</p> <p>[In accordance with 40 CFR 60.5365, this emissions unit includes a reciprocating compressor affected facility.]</p> <p>40 CFR Part 60, Subpart VVa: Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for which construction, reconstruction, or modification commenced after November 7, 2006.</p>	<p>The facility is subject to the applicable requirements of Subpart VVa for equipment leaks of VOC at a facility which commenced construction after August 23, 2011 per 40 CFR 60.5400 of Subpart OOOO.</p> <p>The facility is subject to the provisions of Subpart OOOO for reciprocating compressors which commenced construction after August 23, 2011.</p> <p>See b)(2)c., b)(2)d., b)(2)e., c)(5), c)(6), d)(1), d)(2) and e)(2).</p>
d.	40 CFR Part 60.1 through 60.19	The General Provisions that apply are specified in Table 3 of 40 CFR Part 60, Subpart OOOO.

(2) Additional Terms and Conditions

- a. The 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).

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.

- b. In accordance with 40 CFR Part 60, Subpart OOOO, the following pieces of equipment are affected facilities in a process unit in an onshore natural gas processing plant constructed after August 23, 2011. Fugitive leaks from the following equipment are covered by this permit and subject to the NSPS requirements: each pump, pressure relief device, open-ended valve or line, valve, and flange or other connector in VOC service.



- c. No later than October 15, 2012 or upon startup, the permittee shall demonstrate compliance with the applicable requirements of 40 CFR 60.482-1a(a), (b), and (d), 60.482-2a, and 60.482-4a through 60.482-11a, except as provided in 60.5401.
- d. Equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2a to 60.482-10a if it is identified as required in 40 CFR 60.486a(e)(5).

c) Operational Restrictions

- (1) Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.
- (2) New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- (3) To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves shall be identified in a list to be made available upon request. The non-accessible valves may be identified by one or more of the methods described below:
 - a. piping and instrumentation diagram (PID); or
 - b. a written or electronic database.
- (4) New and reworked piping connections greater than 2 inches shall be welded or flanged. Screwed connections are permissible only on piping 2 inches in diameter or less. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 8 hours of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance.

Compliance with the requirements of this condition does not assure compliance with requirements of NSPS or NESHAPS and does not constitute approval of alternate standards for these regulations.

- (5) The permittee shall comply with the applicable restrictions for equipment leaks of 40 CFR Part 60, Subparts OOOO and VVa, including the following sections:

60.5400(f)	Each piece of equipment is presumed to be in VOC service or wet gas service unless demonstrated otherwise.
60.5400(a) and 60.482-2a(b)(2)(ii)	Designate visual indications of liquids dripping from a pump seal as a leak, and repair the leak using the procedures in 60.482-2a(c) or by eliminating the visual indications of

	liquids dripping.
60.5400(a) and 60.482-2a(c)(1)	Repair detected leaks from pumps in light liquid service not later than <u>15 calendar days</u> after detection, except as provided in 60.482-9a for delay of repair.
60.5400(a) and 60.482-2a(c)(2)	Attempt first repair of detected leaks from pumps in light liquid service within <u>5 calendar days</u> after each leak is detected.
60.5400(a) and 60.482-2a(d)	Meet the requirements of 60.482-2a(d) for pumps equipped with a dual mechanical seal system in lieu of 60.482-2a(a).
60.5400(a), 60.482-2a(e) and 60.486a(e)	Meet the requirements of 60.482-2a(e) for pumps designated for no detectable emissions (less than 500 ppm above background) in lieu of 60.482-2a(a), (c) and (d).
60.5400(a), 60.482-2a(g) and 60.486a(f)(1)	Meet the requirements of 60.482-2a(g) for pumps designated as unsafe to monitor in lieu of 60.482-2a(a) and (d)(4) – (6).
60.5400(a) and 60.482-4a	Repair detected leaks from pressure relief devices in gas/vapor service as soon as practicable, but not later than <u>15 calendar days</u> after detection, except as provided in 60.482-9a, and attempt first repair within <u>5 days</u> after each leak is detected.
60.5400(a) and 60.482-4a(d)	Meet the requirements of 60.482-4a(d)(2) for any pressure relief device equipped with a rupture disk upstream of the pressure relief device in lieu of 60.482-4a(a) and (b).
60.5400(a), 60.482-5a and 60.5401(c)	Sampling connection systems are exempt from the requirements of 60.482-5a.
60.5400(a) and 60.482-6a(a)(1)	Equip each open-ended valve or line with a cap, blind flange, plug or a second valve, except as provided in 60.482-1a(c) and 60.482-6a(d) and (e).
60.5400(a), 60.482-6a(a)(2) and (b) through (e)	Operate each open-ended valve or line in compliance with the requirements of 60.482-6a(a)(2) and (b) through (e).
60.5400(a), 60.482-7a(d)(1) and (2)	Repair detected leaks from valves in gas/vapor or light liquid service as soon as practicable, but not later than <u>15 calendar days</u> after detection, except as provided in 60.482-9a, and attempt first repair within <u>5 days</u> after each leak is detected.

60.5400(a) and 60.482-7a(e)	Use best practices in the first attempt at repair of leaks from valves in gas/vapor or light liquid service.
60.5400(a) and 60.482-7a(f)	Meet the requirements of 60.482-7a(f) for valves in gas/vapor or light liquid service designated for no detectable emissions (less than 500 ppm above background) in lieu of 60.482-7a(a).
60.5400(a) and 60.482-7a(g)	Meet the requirements of 60.482-7a(g) for valves in gas/vapor or light liquid service designated as unsafe to monitor in lieu of 60.482-7a(a).
60.5400(a) and 60.482-7a(h)	Meet the requirements of 60.482-7a(h) for valves in gas/vapor or light liquid service designated as difficult to monitor in lieu of 60.482-7(a).
60.5400(a) and 60.482-8a(c)	Repair detected leaks from pumps and valves in heavy liquid service, pressure relief devices in light or heavy liquid service, and connectors as soon as practicable, but not later than <u>15 calendar days</u> after detection, except as provided in 60.482-9a, and attempt first repair within <u>5 days</u> after each leak is detected.
60.5400(a) and 60.482-8a(d)	Use best practices in the first attempt at repair of leaks from pumps and valves in heavy liquid service, pressure relief devices in light or heavy liquid service, and connectors.
60.5400(a) and 60.482-9a	Meet the requirements of 60.482-9a for delays of repair.
60.5400(a) and 60.482-10a(a) through (d) and (m)	Meet the requirements of 60.482-10a for closed vent systems and control devices.
60.5400(a) and 60.482-10a(g)	Repair detected leaks from closed vent systems and control devices as soon as practicable, but not later than <u>15 calendar days</u> after detection and attempt first repair within <u>5 days</u> after each leak is detected.
60.5400(a) and 60.482-10a(h)	Meet the requirements of 60.482-10a(h) for delays of repair.

*The permittee may choose to comply with any alternative standards provided in 40 CFR Part 60, Subparts A and OOOO.

- (6) The permittee shall comply with the applicable restrictions for reciprocating compressors of 40 CFR Part 60, Subpart OOOO, including the following sections:

60.5385(a)	and	Replace the reciprocating compressor rod packing prior to completing 26,000 hours of operation since startup or the last
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60.5415(c)(3)	rod packing replacement, or within 36 months of startup or the last rod packing replacement.
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d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall comply with the applicable monitoring and record keeping requirements for equipment leaks required under 40 CFR Part 60, Subparts OOOO and VVa, including the following sections:

60.5400(a), 60.482-2a(a)(1) and 60.485a(b)	Monitor each pump in light liquid service within 30 days after the end of the startup period and <u>monthly</u> thereafter to detect leaks, except as provided in 60.482-1a(c) and (f) and 60.482-2a(d), (e) and (f).
60.5400(a) and 60.482-2a(a)(2)	Visually inspect each pump in light liquid service each <u>week</u> for indications of liquids dripping from the pump seal, except as provided in 60.482-1a(f).
60.5400(a) and (d), 60.482-2a(b)(1) and 60.485a(b)(1)	Detect leaks from pumps in light liquid service at an instrument reading of 2,000 ppm or greater (except pumps handling polymerizing monomers).
60.5400(a) and 60.482-2a(b)(2)(i)	Monitor each pump in light liquid service in accordance with 60.485a(b) within 5 days of discovery of liquids dripping from the pump seal.
60.5400(a) and 60.482-2a(h)	Alternate inspection requirements for pumps located at unmanned plant sites.
60.5400(a), 60.482-4a and 60.5401(b)(1)	Monitor each pressure relief device in gas/vapor service <u>quarterly</u> and within <u>5 days</u> after each pressure release to detect leaks in accordance with 60.485a(b).
60.5400(a) and (d), 60.5401(b)(2), 60.482-4a and 60.485a(b)(1)	Detect leaks from pressure relief devices in gas/vapor service at an instrument reading of 500 ppm above background.
60.5400(a) and 60.482-7a(a)	Monitor each valve in gas/vapor and light liquid service within 30 days after the end of the startup period and <u>monthly</u> thereafter to detect leaks, except as provided in 60.482-1a(c) and (f) and 60.482-7a(f), (g) and (h).
60.5400(a) and (d), 60.482-7a(b) and 60.485a(b)(1)	Detect leaks from valves in gas/vapor and light liquid service at an instrument reading of 500 ppm.
60.5400(a) and 60.482.7a(c)(1)(i)	Monitor each valve in gas/vapor or light liquid service for which a leak is not detected for 2 successive months during

	the first month of each quarter until a leak is detected.
60.5400(a) and 60.482-7a(c)(1)(ii)	Monitor assigned subgroups of valves in gas/vapor or light liquid service that are inspected during a different month during the quarter, provided each subgroup is monitored every 3 months.
60.5400(a) and 60.482-7a(c)(2)	Monitor leaking valves in gas/vapor or light liquid service monthly until a leak is not detected for 2 successive months.
60.5400(a) and 60.482-8a(a)(1) or (2)	Monitor pumps, valves and connectors in heavy liquid service and pressure relief devices in light or heavy liquid service within <u>5 days</u> by the method specified in 60.485a(b) and comply with 60.482-8a(b) through (d) if visual, audible, olfactory or other detection methods indicate a potential leak, or eliminate indications of leaks within 5 calendar days of detection.
60.5400(a) and (d), 60.482-8a(b) and 60.485a(b)(1)	Detect leaks from pumps, valves and connectors in heavy liquid service and pressure relief devices in light or heavy liquid service at an instrument reading of 10,000 ppm.
60.5400(a), 60.482-10a(e), (f), (l) and 60.485a(b)	Monitor each control device to ensure conformance with their designs and inspect each closed vent system initially and annually to detect leaks, except as provided in 60.482-10a(i) through (k).
60.5400(a) and (d), and 60.482-10a(g)	Detect leaks from closed vent systems and control devices at an instrument reading of 500 ppmv above background or by visual inspections.
60.5400(a) and 60.482-11a(g)	Identify the connectors subject to 60.482-11a.
60.5400(e), 60.486a(b) and (c), 60.5421(b)(1) and (b)(2)	Maintain required information for detected leaks.
60.5400(e) and 60.486a(d)	Required records for the design of the closed vent systems and control devices and period of time when they were not in operation as required.
60.5400(e) and 60.486a(e)	Required records for equipment identification and records for each leak test conducted (dates and results).
60.5400(e) and 60.486a(f)	Required records for valves, pumps and connectors identified as unsafe or difficult to monitor.
60.5400(e) and	Records required for valves where complying with 40 CFR



60.486a(g)	60.483-2a for skip leak detection and repair.
60.5400(e) and 60.486a(h)	Maintain required information on design criteria in 60.482-2a(d)(5) and 60.482-3a(e)(2).
60.5400(e) and 60.486a(i) and (j)	Records required for exemptions from the leak detection requirements, the analysis/data demonstrating that a piece of equipment is “not in VOC service” and the analysis demonstrating the design capacity of the process unit.
60.5401(b) and 60.5421(b)(2)	Additional record keeping and monitoring requirements for pressure relief devices at an onshore natural gas processing plant.

- (2) The permittee shall comply with the applicable monitoring and record keeping requirements for reciprocating compressors required under 40 CFR Part 60, Subpart OOOO, including the following sections:

60.5410(c)(1)	During the initial compliance period, continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement for reciprocating compressors.
60.5415(c)(1)	For reciprocating compressors, continuously monitor the number of hours of operation or track the number of months since initial startup or since the date of the most recent compressor rod packing replacement, whichever is later.
60.5410(c)(4), 60.5415(c)(2), and 60.5420(c)(3)	Maintain records of the required information for reciprocating compressors.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA Northeast District Office 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. It is recommended that the PER is submitted electronically through the Ohio EPA’s “e-Business Center: Air Services” although PERs can be submitted via U.S. postal service or can be hand delivered.
- (2) The permittee shall comply with the applicable reporting requirements required under 40 CFR Part 60, Subparts OOOO and VVa, including the following sections:

60.5410(c)(2) and (f), 60.5420(a), 60.7(a)	Initial notification requirements.
60.5410(c)(3),	Submit initial annual report within 30 days after the end of the



60.5415(c)(2), and 60.5420(b)	initial compliance period. Subsequent annual reports are due on the same date each year as the initial annual report.
60.5400(e), 60.487a(a), (b) and (c), and 60.5422(a), (b) and (c).	Submit semiannual reports beginning six months after the initial startup date.

f) Testing Requirements

(1) Compliance with the emissions limitations and/or control requirements specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

Fugitive emissions of VOC shall not exceed 0.22 ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

Compliance with the allowable VOC emission limitation above shall be demonstrated by the following calculation based on the emissions factors (lb/hr/source) and LDAR monitoring control efficiencies in Table 2-4 of U.S. EPA's Protocol for Equipment Leak Emission Estimates (11/95), the guidance document entitled "Oil and Gas Production Operations" from the Texas Commission on Environmental Quality (10/00), and the recordkeeping in d)(1):

$$\begin{aligned}
 \text{VOC (ton/mo. averaged over a twelve-month, rolling period)} = & \{[(\# \text{ of valves in gas service} \times \text{gas service valve EF} \times \text{gas service valve control efficiency}) \\
 & + (\# \text{ of valves in heavy oil service} \times \text{heavy oil service valve EF}) + (\# \text{ of valves in light oil service} \times \text{light oil service valve EF} \times \text{light oil service valve control efficiency}) \\
 & + (\# \text{ of pumps in light oil service} \times \text{light oil service pump EF} \times \text{light oil service pump control efficiency}) + (\# \text{ of pumps in heavy oil service} \times \text{heavy oil service pump EF}) \\
 & + (\# \text{ of flanges in gas service} \times \text{gas service flange EF}) + (\# \text{ of flanges in heavy oil service} \times \text{heavy oil service flange EF}) \\
 & + (\# \text{ of flanges in light oil service} \times \text{light oil service EF}) + (\# \text{ of other points in gas service} \times \text{gas service other equipment EF}) \\
 & + (\# \text{ of relief valves in gas service} \times \text{gas service relief valves EF})\} \times 8,760 \text{ hours/year} \times 1 \text{ ton}/2,000 \text{ lbs}/12 \text{ months}
 \end{aligned}$$

where:

- Valve EFs = 9.92E-03 lb/hr/source for gas service;
- Pump Seal EFs = 5.29E-03 lb/hr/source for gas service;
- Connector EFs = 4.41E-04 lb/hr/source for gas service;
- Flange EFs = 8.6E-04 lb/hr/source for gas service;
- Relief Valve and Meters EFs = 1.94E-02 lb/hr/source for gas service;
- Other* EFs = 1.94E-02 lb/hr/source for gas service; and



LDAR monitoring control efficiencies = 97% for valves in gas service, meters in gas service and relief valves in gas service; 75% for other/compressors in gas service; and 30% for flanges and connectors in gas service.

* includes drains/vents, pressure safety valves and sample points.

g) Miscellaneous Requirements

- (1) Any amendment to 40 CFR Part 60, Subpart OOOO shall supersede the compliance limitations and/or options contained in this permit.