



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

6/4/2015

Certified Mail

Ms. Tonya Winkler
 Rice Energy Cat Run Rd CS
 300 Woodcliff Dr.
 Canonsburg, PA 15317

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

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0656025012
 Permit Number: P0118689
 Permit Type: Initial Installation
 County: Monroe

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate (PTIO) for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, Monroe County Beacon. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically 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. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall and Ohio EPA DAPC, Southeast District Office
 Permit Review/Development Section 2195 Front Street
 Ohio EPA, DAPC Logan, OH 43138
 50 West Town Street Suite 700
 PO Box 1049
 Columbus, Ohio 43216-1049

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Southeast District Office at (740)385-8501.

Sincerely,

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

Cc: U.S. EPA Region 5 Via E-Mail Notification
 Ohio EPA-SEDO; Pennsylvania; West Virginia

PUBLIC NOTICE

The following matters are the subject of this public notice by the Ohio Environmental Protection Agency. The complete public notice, including any additional instructions for submitting comments, requesting information, a public hearing, or filing an appeal may be obtained at: <http://epa.ohio.gov/actions.aspx> or Hearing Clerk, Ohio EPA, 50 W. Town St., Columbus, Ohio 43215. Ph: 614-644-2129 email: HClerk@epa.ohio.gov

Draft Air Pollution Permit-to-Install and Operate Initial Installation
Rice Energy Cat Run Rd CS

48208 St Rte 556,,Beallsville, OH 43716

ID#:P0118689

Date of Action: 6/4/2015

Permit Desc:Synthetic minor initial installation PTIO to make the use of catalytic oxidation units (catalytic converters) for eight (8) natural gas compressor engines (P001-P008) federally enforceable for purposes of avoiding Title V..

The permit and complete instructions for requesting information or submitting comments may be obtained at: <http://epa.ohio.gov/dapc/permitsonline.aspx> by entering the ID # or: Cynthia Smith, Ohio EPA DAPC, Southeast District Office, 2195 Front Street, Logan, OH 43138. Ph: (740)385-8501

Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

Rice Energy Cat Run Rd CS (Rice Energy) is installing a natural gas compressor station as a support facility for the oil and gas industry. Rice Energy will be located at 48208 St Rte 556 Beallsville, Monroe County. This federally enforceable permit-to-install and operate (FEPTIO) includes eight new natural-gas fired compressor engines, each rated at 2370 horsepower (HP) [17.96 mmBtu/hr]. The engines will be equipped with oxidation catalysts to comply with both RICE NESHAP and NSPS requirements. Additionally, Rice Energy has requested the use of the oxidation catalyst to be federally enforceable to limit the potential to emit for CO, VOC and formaldehyde for purposes of avoiding a major Title V source status.

3. Facility Emissions and Attainment Status:

Monroe County is in attainment for all criteria pollutants. In the absence of the requested federally enforceable restrictions on the control equipment, the compressor engines potential to emit of CO and VOC would exceed the Title V threshold of 100 tons per year at 503.47 tons and 115.34 tons, respectively. Additionally, potential to emit of formaldehyde would exceed Title V threshold of 10 tons per year at 47.60 tons. With the requested federally enforceable control equipment, potential to emit for CO, VOC and formaldehyde is restricted to 35.28 tons, 21.92 tons and 7.12 tons per rolling, 12-month period. As such, the facility will not be subject to Title V requirements.

4. Source Emissions:

This permit authorizes up to 4.41 tons of CO, 2.74 tons VOC and 0.89 ton formaldehyde emissions per rolling, 12-month period from each of the eight engines based on the manufacturer guaranteed control efficiencies with the use of the oxidation catalyst as documented in the FEPTIO application.

5. Conclusion:

The operational restrictions, emissions limits, monitoring and record keeping requirements in this permit are sufficient to limit the federally enforceable potential to emit for CO, VOC and formaldehyde to 35.28 tons CO, 21.92 tons VOC and 7.12 tons formaldehyde per rolling, 12-month period for all eight engines combined. As a result, the facility will avoid being classified as a major stationary source and major Title V source.

6. Please provide additional notes or comments as necessary:

None



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

<u>Pollutant</u>	<u>Tons Per Year</u>
CO	35.28
VOC	21.92
Formaldehyde	7.12
NOx	91.52
SO2	0.40
PM10	0.05



DRAFT

**Division of Air Pollution Control
Permit-to-Install and Operate
for
Rice Energy Cat Run Rd CS**

Facility ID:	0656025012
Permit Number:	P0118689
Permit Type:	Initial Installation
Issued:	6/4/2015
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance



Division of Air Pollution Control
Permit-to-Install and Operate
for
Rice Energy Cat Run Rd CS

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Draft Permit-to-Install and Operate

Rice Energy Cat Run Rd CS

Permit Number: P0118689

Facility ID: 0656025012

Effective Date: To be entered upon final issuance

Authorization

Facility ID: 0656025012
Application Number(s): A0053062
Permit Number: P0118689
Permit Description: Synthetic minor initial installation PTIO to make the use of catalytic oxidation units (catalytic converters) for eight (8) natural gas compressor engines (P001-P008) federally enforceable for purposes of avoiding Title V.
Permit Type: Initial Installation
Permit Fee: \$1,600.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 6/4/2015
Effective Date: To be entered upon final issuance
Expiration Date: To be entered upon final issuance
Permit Evaluation Report (PER) Annual Date: To be entered upon final issuance

This document constitutes issuance to:

Rice Energy Cat Run Rd CS
48208 St Rte 556
Beallsville, OH 43716

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: P0118689
 Permit Description: Synthetic minor initial installation PTIO to make the use of catalytic oxidation units (catalytic converters) for eight (8) natural gas compressor engines (P001-P008) federally enforceable for purposes of avoiding Title V.

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

Group Name: 2370 HP SI Compressor Engines

Emissions Unit ID:	P001
Company Equipment ID:	C301
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P002
Company Equipment ID:	C302
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P003
Company Equipment ID:	C303
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P004
Company Equipment ID:	C304
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P005
Company Equipment ID:	C305
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P006
Company Equipment ID:	C306
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P007
Company Equipment ID:	C307
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P008
Company Equipment ID:	C308
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



Draft Permit-to-Install and Operate
Rice Energy Cat Run Rd CS
Permit Number: P0118689
Facility ID: 0656025012
Effective Date: To be entered upon final issuance

A. Standard Terms and Conditions

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

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

2. Who is responsible for complying with this permit?

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

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

3. What records must I keep under this permit?

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

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

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

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

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

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

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

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

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

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

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

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

7. What reports must I submit under this permit?

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

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

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions 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 Ohio EPA DAPC, Southeast District Office in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

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

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

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

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

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

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

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

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

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

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

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.



Draft Permit-to-Install and Operate
Rice Energy Cat Run Rd CS
Permit Number: P0118689
Facility ID: 0656025012
Effective Date: To be entered upon final issuance

B. Facility-Wide Terms and Conditions



Draft Permit-to-Install and Operate

Rice Energy Cat Run Rd CS

Permit Number: P0118689

Facility ID: 0656025012

Effective Date: To be entered upon final issuance

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.
2. This facility is subject to the requirements of 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines. Although Ohio EPA has determined that this Generally Available Control Technology (GACT) NESHAP applies, at this time Ohio EPA does not have authority to enforce this standard. Instead, U.S. EPA has the authority to enforce this standard. Please be advised that all requirements associated with this rule are in effect and shall be enforced by U.S. EPA. For more information on the area source rules, please refer to the following U.S. EPA website: <http://www.epa.gov/ttn/atw/arearules.html>.
3. This facility is subject to 40 CFR Part 60, Subpart JJJJ, New Source Performance Standards: Stationary Spark Ignition Internal Combustion Engines. The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart JJJJ. The permittee shall also comply with all applicable requirements of 40 CFR Part 60, Subpart A (General Provisions) as identified in Table 3 of 40 CFR Part 63, Subpart JJJJ. Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR Part 60 Subpart JJJJ and Subpart A. The NSPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the appropriate Ohio EPA District office or local air agency.



Draft Permit-to-Install and Operate
Rice Energy Cat Run Rd CS
Permit Number: P0118689
Facility ID: 0656025012
Effective Date: To be entered upon final issuance

C. Emissions Unit Terms and Conditions



**1. Emissions Unit Group -2370 HP SI Compressor Engines:
P001,P002,P003,P004,P005,P006,P007,P008**

EU ID	Operations, Property and/or Equipment Description
P001	Compressor #1 - driven by Caterpillar G3608 engine
P002	Compressor #2 - driven by Caterpillar G3608 engine
P003	Compressor #3 - driven by Caterpillar G3608 engine
P004	Compressor #4 - driven by Caterpillar G3608 engine
P005	Compressor #5 - driven by Caterpillar G3608 engine
P006	Compressor #6 - driven by Caterpillar G3608 engine
P007	Compressor #7 - driven by Caterpillar G3608 engine
P008	Compressor #8 - driven by Caterpillar G3608 engine

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. b)(1)a., b)(2)a., c)(1), f)(1)a., f)(1)b. and f)(1)c.

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(D)	<p><u>From each emissions unit individually:</u> 1.01 pounds (lbs) carbon monoxide (CO)/hour (hr) and 4.41 tons CO per rolling, 12-month period</p> <p>0.62 lb volatile organic compounds (VOC)/hr and 2.74 tons VOC per rolling, 12-month period</p> <p>0.20 lb formaldehyde/hr and 0.89 ton formaldehyde per rolling, 12-month period</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)a., c)(1), f)(1)a., f)(1)b. and f)(1)c.
b.	ORC 3704.03(T) [Best Available Technology (BAT) for pollutants greater than 10 tons per year]	<u>From each emissions unit individually:</u> Install an engine designed to meet an air-to-fuel (A/F) ratio of 0.5 grams (g) nitrogen oxides (NOx)/horsepower-hour (hp-hr) See b)(2)b.
c.	OAC rule 3745-31-05(A)(3), as effective June 30, 2008	<u>From each emissions unit individually:</u> Install an engine designed to meet the following: 5.88E-4 lb sulfur dioxide (SO ₂)/million British thermal units (mmBtu) 7.71E-5 lb particulate matter less than 10 microns in size (PM ₁₀)/mmBtu See b)(2)c.
d.	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 CO, VOC, SO ₂ and PM ₁₀ emissions from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)d. and b)(2)e.
e.	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity, as a six-minute average, except as provided by rule
f.	OAC rule 3745-17-11(B)(5)(b)	PE emissions shall not exceed 0.062 lb/mmBtu of actual heat input See b)(2)h.
g.	OAC rule 3745-18-06(G)	See b)(2)f.
h.	OAC rule 3745-110-03(F)	See b)(2)i.
i.	40 CFR, Part 60, Subpart JJJJ (40 CFR 60.4230-4248) [40 CFR 60.4232(e)] In accordance with 40 CFR 60.4230, this emissions unit is subject to the New Source Performance Standards (NSPS) for Stationary Spark Ignition (SI) Internal Combustion Engines	Non-emergency, stationary, spark ignition, lean burn, internal combustion engine greater than 500 HP manufactured after July 1, 2010 The exhaust emissions from this engine shall not exceed: 1.0 g NOx/hp-hr or 82 ppmvd at 15%



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	(ICE). Table 1 to 40 CFR, Part 60, Subpart JJJJ	O ₂ [See b)(2)l.] 2.0 g CO/hp-hr or 270 ppmvd at 15% O ₂ 0.7 g VOC/HP-hr or 60 ppmvd at 15% O ₂ See b)(2)g., b)(2)j., b)(2)k., c)(3), d)(3), e)(3), e)(4), f)(1)i., f)(1)j., f)(1)k., f)(2) and g)(1).
j.	40 CFR, Part 60, Subpart A (40 CFR 60.1-19) [40 CFR 60.4246]	Table 3 to Subpart JJJJ of 40 CFR Part 60 – Applicability of General Provisions to Subpart JJJJ shows which parts of the General Provisions in 40 CFR 60. 1-19 apply.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Title V requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
 - i. 1.01 lbs CO/hr and 4.41 tons CO per rolling, 12-month period;
 - ii. 0.62 lb VOC/hr and 2.74 tons VOC per rolling, 12-month period; and
 - iii. 0.20 lb formaldehyde/hr and 0.89 ton formaldehyde per rolling, 12-month period.
- b. The “Best Available Technology” (BAT) requirement under ORC 3704.03(T) has been determined to be the use of an engine designed to meet an A/F ratio of 0.5 g NOx/ hp-hr.
- c. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3), as effective June 30, 2008 has been determined to be the following:
 - i. Employ catalytic oxidation with the following manufacturer’s guaranteed control efficiencies:
 - (a) For CO: 93%; and
 - (b) For VOC: 80%.
 - ii. Install an engine designed to meet the following:
 - (a) 5.88E-4 lb SO₂/ mmBtu; and
 - (b) 7.71E-5 lb PM₁₀/mmBtu.



These “Best Available Technology” (BAT) emission limits apply 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).

- d. 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.

It should be noted that the requirements established pursuant to OAC rule 3745-31-05(D) will remain applicable after the above SIP revisions are approved by U.S. EPA.

- e. BAT requirements under OAC rule 3745-31-05(A)(3), as effective June 30, 2008 are not applicable to the formaldehyde emitted from these emissions units. BAT is only applicable to emissions of an air contaminant or precursor of an air contaminant for which a national ambient air quality standard (NAAQS) has been adopted under the Clean Air Act. Formaldehyde is an air contaminant that does not involve an established NAAQS.
- f. Pursuant to OAC rule 3745-18-06(A), these emissions units are exempt from the requirements of OAC rule 3745-18-06(G) since natural gas is the only fuel burned in these emissions units.
- g. The permittee shall comply with the applicable requirements required under 40 CFR, Part 60, Subpart JJJ, including the following sections:

60.4233(e)	Emission standards for stationary spark ignition internal combustion engines equal to or greater than 100 HP.
60.4243(b)(1)	Purchase an engine certified according to procedures specified in 40 CFR, Part 60, Subpart JJJJ.

- h. The PE emission limitation pursuant to OAC rule 3745-17-11(B)(5)(b) shall become effective once U.S. EPA approves the June 30, 2008 version of OAC rule 3745-31-05 as part of the State Implementation Plan.
- i. The emission limitation required by OAC rule 3745-110-03(F) is less stringent than the emission limitation established pursuant to ORC 3704.03(T).
- j. The following term and condition addresses the requirements for replacing emissions units P001-P008 due to unforeseen circumstances (i.e. catastrophic failure) which result in the existing engine being inoperable:



Draft Permit-to-Install and Operate

Rice Energy Cat Run Rd CS

Permit Number: P0118689

Facility ID: 0656025012

Effective Date: To be entered upon final issuance

- i. The replacement engine must be manufactured by Caterpillar with a model of G3608LE, and have the same emission factors as the existing engine.
- ii. The replacement engine must not increase the rated capacity, production rate, or throughput of the existing engine.
- iii. The permittee shall notify the Ohio EPA, Southeast District Office when an engine replacement is necessary. This notification may be verbally or in writing and must be within five days of the determination that an engine replacement is necessary due to the inoperative state of the existing engine.
- iv. The permittee shall submit the written notification requested in section e)(4).
- v. The replacement engine must comply with all of the terms and conditions of this permit.
- vi. The permittee may install and operate only eight engines at this facility.
- vii. If the permittee installs an engine that was manufactured after July 1, 2007, this engine will be subject to the requirements of 40 CFR Subpart JJJJ [See d)(3) and e)(3)].
- k. If the permittee does not operate and maintain a certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, that engine will be considered a non-certified engine [See f)(2)].
- l. The NOx emission limitation required by 40 CFR, Part 60, Subpart JJJJ is less stringent than the emission limitation established pursuant to ORC 3704.03(T).

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit potential to emit [See b)(2)a.):

- a. The use of catalytic oxidization units (catalytic converters) capable of achieving the following control efficiencies:

Pollutant	Control Efficiency
CO	93%
VOC	80%
Formaldehyde	85%

- (2) The permittee shall burn only natural gas in these emissions units.
- (3) The permittee shall comply with the applicable requirements required under 40 CFR, Part 60, Subpart JJJJ, including the following sections:

60.4243(e)	The permittee may operate the engine using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use.
60.4243(g)	Operation and maintenance of air-to-fuel ratio controllers.

d) Monitoring and/or Recordkeeping Requirements

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

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item d)(1)d. above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

- (2) 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 these emissions units.

- (3) The permittee shall comply with the applicable monitoring and record keeping requirements under 40 CFR, Part 60, Subpart JJJJ, including the following sections:

60.4245(a)(1)	Maintain records of all notifications and documents supporting any notification required in this subpart.
60.4245(a)(2)	Maintain records of maintenance conducted on the engine.
60.4245(a)(3)	Maintain documentation from the manufacturer that the engine meets the emission standards of this subpart.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (2) The permittee shall identify the following information in the annual permit evaluation report in accordance with the monitoring requirements for visible emissions in term number d)(1) above:
- a. all days during which any visible particulate emissions were observed from the stack serving these emissions units; and
 - b. any corrective actions taken to minimize or eliminate the visible particulate emissions.

The above information shall be provided as an attachment to the PER. If there are no day(s) and or corrective action(s) to identify as required above, the permittee shall indicate within the "Additional Information and Corrections" section of the PER that no visible emissions were observed and no corrective actions were taken.

- (3) If applicable, the permittee shall submit notifications and reports for non-certified engines to the appropriate Ohio EPA District Office or local air agency as required pursuant to 40 CFR, Subpart JJJJ, including the following sections:

60.4245(c)	non-certified engine notification
60.4245(d)	due date for stack test reports

- (4) In the event of unforeseen circumstances (i.e. catastrophic failure) which results in the existing engine being inoperable, the permittee must submit a written statement to the Ohio EPA, Southeast District Office. The statement must be submitted within 30 days of the installation of the replacement engine and shall include the following information:



- a. The manufactured date for the replacement engine;
 - b. The manufacturer, model number and serial number for the replacement engine;
 - c. The installation and startup dates for the replacement engine; and
 - d. An affirmation from the permittee, that the replacement engine will be operated in compliance with the terms and conditions of this permit.
- (5) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- 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. Emission Limitations:

1.01 lbs CO/hr and 4.41 tons CO per rolling, 12-month period

Applicable Compliance Method:

The hourly emission limitation was developed by multiplying the manufacturer supplied emission factor of 2.75 g/hp-hr by the maximum engine power of 2370 brake-horsepower (bph), then dividing by 453.59 g/lb and applying a 93% control efficiency.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by testing in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A.

The rolling, 12-month emission limitation was developed by multiplying the hourly emission limitation, by a maximum operating schedule of 8760 hrs/yr, then dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the

hourly emission limitation, compliance with the annual emission limitation shall also be demonstrated.

b. Emission Limitations:

0.62 lb VOC/hr and 2.74 tons VOC per rolling, 12-month period

Applicable Compliance Method:

The hourly emission limitation was developed by multiplying the manufacturer supplied emission factor of 0.6 g/hp-hr by the maximum engine power of 2370 brake-horsepower (bph), then dividing by 453.59 g/lb and applying an 80% control efficiency.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by testing in accordance with Methods 1-4 and 18, 25 or 25A, as appropriate, of 40 CFR, Part 60, Appendix A.

The rolling, 12-month emission limitation was developed by multiplying the hourly emission limitation, by a maximum operating schedule of 8760 hrs/yr, then dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly emission limitation, compliance with the annual emission limitation shall also be demonstrated.

c. Emission Limitations:

0.20 lb formaldehyde/hr and 0.89 ton formaldehyde per rolling, 12-month period

Applicable Compliance Method:

The hourly emission limitation was developed by multiplying the manufacturer supplied emission factor of 0.26 g/hp-hr by the maximum engine power of 2370 brake-horsepower (bph), then dividing by 453.59 g/lb and applying an 85% control efficiency.

If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4 and 316 or 318, as appropriate, of 40 CFR, Part 60, Appendix A.

The rolling, 12-month emission limitation was developed by multiplying the hourly emission limitation, by a maximum operating schedule of 8760 hrs/yr, then dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly emission limitation, compliance with the annual emission limitation shall also be demonstrated.

d. Emission Limitation:

Install an engine designed to meet an air-to-fuel (A/F) ratio of 0.5 g NO_x/hp-hr



Applicable Compliance Method:

The gr/hp-hr emission limitation was established based on the manufacturer emission factor provided by the permittee in permit application #A0053062.

If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A.

e. Emission Limitation:

5.88E-4 lb SO₂/mmBtu

Applicable Compliance Method:

The lb/mmBtu emission limitation was established based on the AP-42 emission factor provided by the permittee in permit application #A0053062.

If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 and 6 of 40 CFR, Part 60, Appendix A.

f. Emission Limitation:

7.71E-5 lb PM₁₀/mmBtu

Applicable Compliance Method:

The lb/mmBtu emission limitation was established based on the AP-42 emission factor provided by the permittee in permit application #A0053062.

If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M.

g. Emission Limitation:

Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the stack visible particulate emissions limitation visible emissions observations performed in accordance with OAC rule 3745-17-03(B)(1).

h. Emission Limitation:

PE emissions shall not exceed 0.062 lb/mmBtu of actual heat input

Applicable Compliance Method:

The PE limitation is from OAC rule 3745-17-11(B)(5) for stationary internal combustion engines.

If required, the permittee shall demonstrate compliance by testing in accordance with OAC rule 3745-17-03(B)(10).

i. Emission Limitation:

1.0 g NO_x/hp-hr or 82 ppmvd at 15% O₂

Applicable Compliance Method:

The above emission limitations were established in accordance with the emission standards established pursuant to 40 CFR, Part 60, Subpart JJJJ. The emission limitations are reflective of emission control techniques from the use of appropriate air/fuel ratios and electronic control module (ECM) for fuel metering.

j. Emission Limitation:

2.0 g CO/hp-hr or 270 ppmvd at 15% O₂

Applicable Compliance Method:

The above emission limitations were established in accordance with the emission standards established pursuant to 40 CFR, Part 60, Subpart JJJJ. The emission limitations are reflective of emission control techniques from the use of appropriate air/fuel ratios and ECM for fuel metering.

k. Emission Limitation:

0.7 g VOC/HP-hr or 60 ppmvd at 15% O₂

Applicable Compliance Method:

The above emission limitations were established in accordance with the emission standards established pursuant to 40 CFR, Part 60, Subpart JJJJ. The emission limitations are reflective of emission control techniques from the use of appropriate air/fuel ratios and ECM for fuel metering.

(2) If a non-certified engine is installed at the facility, and the engine was manufactured after July 1, 2007, the permittee shall conduct emission testing for this emissions unit in accordance with the following requirements:

- a. The emissions testing shall be conducted within one year of engine startup and conduct subsequent performance testing every 8760 hrs of operation or 3 years, whichever comes first, thereafter to demonstrate compliance.
- b. The emission testing shall be conducted to demonstrate compliance with the following limits:

- i. The mass emission limitations of 0.5 g NO_x/hp-hr, 1.01 lbs CO/hr and 0.62 lb VOC/hr.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
 - i. Methods 1-4 of 40 CFR, Part 60, Appendix A;
 - ii. For NO_x – Method 7 of 40 CFR, Part 60, Appendix A;
 - iii. For CO – Method 10 of 40 CFR, Part 60, Appendix A; and
 - iv. For VOC – Methods 18, 25 or 25A, as appropriate, of 40 CFR, Part 60, Appendix A.

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

- d. The tests shall be conducted while this emissions unit is operating at its maximum capacity and meet the testing requirements in 40 CFR 60.4244, unless otherwise specified or approved by the Ohio EPA, Division of Air Pollution Control. 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, Division of Air Pollution Control. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the times and dates of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA District Office's air agency's refusal to accept the results of the emissions tests.
- e. Personnel from the Ohio EPA District Office's air agency shall be permitted to witness the test, 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 unit and/or the performance of the control equipment. A comprehensive written report on the emissions tests shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Division of Air Pollution Control within 60 days following completion of the tests.

g) **Miscellaneous Requirements**

- (1) This emissions unit shall meet the applicable requirements pursuant to 40 CFR Part 60.4243 of Subpart JJJJ Part 60 - Compliance Requirements for Owners and Operators.