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

1/31/2014

Certified Mail

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

Charles Baker
Dragon Products
3310 Columbus Street
Wooster, OH 44691

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0285032012
Permit Number: P0116020
Permit Type: Initial Installation
County: Wayne

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)425-9171or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

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

Cc: Ohio EPA-NEDO

FINAL

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

Facility ID:	0285032012
Permit Number:	P0116020
Permit Type:	Initial Installation
Issued:	1/31/2014
Effective:	1/31/2014
Expiration:	1/31/2024

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

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Authorization

Facility ID:	0285032012
Application Number(s):	A0049629
Permit Number:	P0116020
Permit Description:	Initial PTIO for three diesel engines already installed used for oil and gas well field stimulation pump system tests.
Permit Type:	Initial Installation
Permit Fee:	$1,600.00
Issue Date:	1/31/2014
Effective Date:	1/31/2014
Expiration Date:	1/31/2024

Permit Evaluation Report (PER) Annual Date: Oct 1 - Sept 30, Due Nov 15

This document constitutes issuance to:

Dragon Products
3310 Columbus Road
Wooster, OH 44691

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)425-9171

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
Interim Director

Authorization (continued)

Permit Number: P0116020
Permit Description: Initial PTIO for three diesel engines already installed used for oil and gas well field stimulation pump system tests.

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

Emissions Unit ID:	**B001**
Company Equipment ID:	2500 HP Cummins Diesel Engine
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**B002**
Company Equipment ID:	500 HP Detriot MTU Diesel Engine
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**B003**
Company Equipment ID:	174 HP Deutz Diesel Engine
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

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 beingpermanently shut down without first applying for and obtaining a permit pursuantto 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.

C. Emissions Unit Terms and Conditions

1. B001, 2,500 HP Cummins Diesel Engine

Operations, Property and/or Equipment Description:

2,500 HP Cummins model QSK50-C 4-stroke lean-burn compression ignition Diesel Engine subject to 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ. 2007 to 2010 model year, stationary compression ignition (CI) internal combustion engine (ICE); less than 10 liters per cylinder and greater than 2,000 HP and less than 3,000 HP; certified to 40 CFR 89.112 Tier 2 exhaust emission standards in Table 1

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

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

a. None.

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

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	40 CFR Part 60, Subpart IIII 40 CFR 60.4204(b) 40 CFR 60.4201(a) Table 1 to 40 CFR 89.112, Tier 2	The exhaust emissions from this engine shall not exceed: 0.20 gram PM/kW-hr 6.4 grams NOx + NMHC/kW-hr 3.5 grams CO/kW-hr See terms b)(2)(c through e)
b.	OAC rule 3745-110-03(F)(3)	The emission of nitrogen oxides (NOx) shall not exceed 3.0 grams/horsepower-hr (g/HP-hr).

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	40 CFR 60.4207(b) 40 CFR 80.510(b)	The sulfur content of the diesel fuel burned in this emissions unit shall not exceed 15 ppm or 0.0015% sulfur by weight. See terms b)(2)e, c(2), d(1), and e(2).
d.	40 CFR 89.113 (certified by manufacturer)	20% opacity during the acceleration mode 15% opacity during the lugging mode 50% opacity during the peaks in either the acceleration or lugging modes
e.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average, except as specified by rule.
f.	ORC 3704.03(T)	Emissions of nitrogen oxides (NOx) shall not exceed 21.83 tons per year. Emissions of carbon monoxide (CO) shall not exceed 18.99 tons per year.
g.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Compliance with the applicable requirements of 40 CFR Part 60, Subpart IIII Particulate emissions (PE) from this emissions unit shall not exceed 0.82 pound per hour and 1.09 tons per year. Emissions of volatile organic compounds (VOC) shall not exceed 5.34 pounds per hour and 7.05 tons per year. Emissions of sulfur dioxide (SO_2) shall not exceed 0.03 pound per hour and 0.04 ton per year. See b)(2)a.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
h.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b.
i.	OAC rule 3745-17-11(B)(5)	The emission limitation specified by this rule is less stringent than the emission limitation established for PE pursuant to 40 CFR Part 60, Subpart IIII.
j.	40 CFR 63 Subpart ZZZZ 40 CFR 63.6590(c)	A new area source operating in compliance with Part 60 Subpart IIII is the demonstration of compliance for 40 CFR 63 Subpart ZZZZ.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutants less than ten tons per year. However, that rule revision has not yet been approved by the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to the OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006, version of 3745-31-05, then these emission limits/control measures no longer apply.

b. This paragraph applies once U.S. EPA approves the December 1. 2006 version of OAC rule 3745-31-05, as part of the State Implementation Plan, (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions (PE), volatile organic compounds (VOC), and sulfur dioxide (SO2) from this emissions unit since the "controlled" potential to emit is less than ten tons per year.

c. The stationary compression ignition (CI) internal combustion engine (ICE) is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart IIII, the standards of performance for stationary CI ICE.

[40 CFR 60.4200(a)]

d. The stationary CI ICE has been or shall be purchased certified by the manufacturer, to emission standards as stringent as those identified in 40 CFR 60.4201(a) and found in Tier 2 of 40 CFR 89.112, Table 1, for engines greater than 750 horsepower (560 kilowatt), and to the opacity standards found in 40 CFR 89.113.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4203], and [40 CFR 60.4211(c)]

e. The quality of the diesel fuel burned in this emissions unit shall meet the following specifications on an "as received" basis:

i. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.0015 pound sulfur dioxide/MMBtu actual heat input; and 15 ppm sulfur or 0.0015% sulfur by weight;

ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent; and

iii. a heating value greater than 135,000 Btu/gallon.

Compliance with the above-mentioned specifications shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

c) Operational Restrictions

(1) The stationary CI ICE and any control device shall be installed, operated, and maintained according to the manufacturer's emission-related written instructions and the permittee shall only change those emission–related settings that are allowed by the manufacturer. The CI ICE must also be installed and operated to meet the applicable requirements from 40 CFR Part 89, Control of Emissions from New and In-use Non-road CI ICE; and Part 1068, the General Compliance Provisions for Engine Programs. The permittee shall operate and maintain the stationary CI ICE to achieve the emissions standards established in 40 CFR 60.4204 over the entire life of the engine(s).

[40 CFR 60.4206] and [40 CFR 60.4211(a)]

(2) Diesel fuel burned in the CI, ICE shall not exceed the limit for sulfur as specified by 40 CFR 80.510(b), i.e., the maximum sulfur content of diesel fuel shall not exceed 15 ppm or 0.0015% sulfur by weight.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the permittee when the high backpressure limit of the engine is approached.

[40 CFR 60.4209(b)]

(4) The permittee shall operate only one engine at a time.

(5) The maximum annual operating hours for this emissions unit shall not exceed 2,640 hours per year.

d) Monitoring and/or Recordkeeping Requirements

(1) For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of the diesel oil received and the oil supplier's (or permittee's) analyses for sulfur content, in parts per million (40 CFR 80.510) or percent by weight. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR 80.580, using the appropriate ASTM methods. These records shall be retained for a minimum of 5 years and shall be available for inspection by the Director or his/her representative.

[for 40 CFR 60.4207(b)]

(2) The permittee shall maintain the manufacturer's certification, to the applicable Tier 2 emission standards in Table 1 of 40 CFR 89.112, on site or at a central location for all facility ICE and it shall be made available for review upon request. If the manufacturer's certification is not kept on site, the permittee shall maintain a log for the location of each ICE and it shall identify the agency-assigned emissions unit number, the manufacturer's identification number, and the identification number of the certificate. The manufacturer's operations manual and any written instructions or procedures developed by the permittee and approved by the manufacturer shall be maintained at the same location as the ICE.

[40 CFR 60.4211(c)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall keep records of the date, time, and any corrective action(s) taken in response to the notification from the backpressure monitor, that the high backpressure limit of the engine has been approached or exceeded.

[40 CFR 60.4214(c)]

(4) The permittee shall maintain monthly records of the operating hours for this emissions unit.

e) Reporting Requirements.

(1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit. 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.

[OAC 3745-15-03(B)(2) and (D)]

(2) The permittee shall identify in the annual permit evaluation report any period of time (date and number of hours) that the quality of oil burned in this emissions unit did not meet the requirements established in 40 CFR 80.510(b), based upon the required fuel records; and the amount of non-compliant fuel burned on each such occasion.

For [40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall include in the PER any records of the date, time, and any corrective action(s) taken in response to the notification from the monitor that the backpressure has been approached or exceeded.

[for 40 CFR 60.4214(c)]

f) Testing Requirements

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

a. <u>Opacity Limitation</u>:

20% opacity during the acceleration mode

15% opacity during the lugging mode

50% opacity during the peaks in either the acceleration or lugging modes

<u>Applicable Compliance Method</u>:

The ICE shall be purchased certified to the opacity standards of 40 CFR 89.113.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], and [40 CFR 89.113]

b. <u>Opacity Limitation</u>:

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

<u>Applicable Compliance Method</u>:

If required, compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Reference Method 9 in 40 CFR, Part 60, Appendix A.

[OAC rule 3745-17-07(A)(1)]

c. Emission Limitations:

0.20 gram PM/kW-hr

0.82 lb PE/hr and 1.09 tons PE/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 2 exhaust emission standards for diesel engines greater than 750 horsepower (560 kW).

Compliance with the ton per year PE emissions limitation shall be determined by the following calculation:

0.20 g PM/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 2500 HP = 0.82 lb PM/hr

0.82 lb PM/hr x 2640 hours/year x 1 ton/2000 lbs = 1.09 tons PM/year

If required, the permittee shall demonstrate compliance with the PM emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

d. Emission Limitations:

3.0 grams NOx/HP-hr

16.54 lbsNOx/hr and 21.83 tons NOx/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the NOx emissions testing data and by maintaining the engine according to the manufacturer's specifications. The g/HP-hr limit is the emission limitation from OAC 3745-110-03(F)(3).

Compliance with the ton per year NOx emissions limitation shall be determined by the following calculation:

6.61E-03 lbNOx/HP-hr x 2500 HP = 16.54 lbsNOx/hr

16.54 lbsNOx/hr x 2640 hours/year x 1 ton/2000 lbs = 21.83 tons NOx/year

The following test methods shall be employed to demonstrate compliance with the short term emission limitation for NOx:

i. Method 1 or 1A of 40 CFR Part 60, Appendix A to select the sampling port location and the number of traverse points

ii. Method 3, 3A, or 3B of 40 CFR Part 60, Appendix A to measure O_2 at the exhaust of the ICE, to determine the O_2 concentration of the stationary ICE exhaust.

iii. Method 4 of 40 CFR Part 60, Appendix A to measure the moisture of the stationary RICE exhaust.

iv. Method 7, 7A, 7C, 7D, or 7E, as appropriate, of 40 CFR Part 60, Appendix A to measure NOx at the outlet of the RICE control device.

Each performance test shall consist of 3 separate test runs and each test run shall last a minimum of 1 hour and shall be conducted while the internal combustion engine is operating at, or as close as possible, to 100 percent load and 100 percent of its speed; shall be performed under conditions representative of the normal operating modes, including the fuel types or fuel blends employed; and shall exclude periods of startup, shutdown, malfunction, and low load operating conditions. The engine percent load, during the performance test, shall be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load and the estimated percent load shall be included in the notification of compliance.

The permittee shall obtain any additional test data (i.e., flow rates, oxygen concentrations, moisture contents, etc.), diluent monitoring data, source fuel usage, and/or horsepower data, concurrent with the required compliance demonstration in order to convert the emission test results or monitoring data to grams per horsepower-hour.

The permittee shall notify the Director (appropriate Ohio EPA Division of Air Pollution Control District Office or local air agency) in writing of the scheduled performance test date at least 60 calendar days before it is scheduled, to allow the agency time to review and approve the site-specific test plan and to arrange for an observer to be present during the compliance demonstration.

Personnel from the appropriate Ohio EPA District Office or local air agency 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.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], [40 CFR 60.4212(a) and (c)], and [OAC 3745-110-03(F)(3)]

e. Emission Limitations:

3.5 grams CO/kW-hr

14.39 lbs CO/hr and 18.99 tons CO/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 2 exhaust emission standards for diesel engines greater than 750 horsepower (560 kW).

Compliance with the ton per year CO emissions limitation shall be determined by the following calculation:

3.5 g CO/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 2500 HP = 14.39 lbs CO/hr

14.39 lbs CO/hr x 2640 hours/year x 1 ton/2000 lbs = 18.99 tons CO/year

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

f. Emission Limitations:

6.4 grams NOx + NMHC/kW-hr

5.34 lbs VOC/hr and 7.05 tons VOC/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 2 exhaust emission standards for diesel engines greater than 750 horsepower (560 kW).

For the purpose of reporting emissions, where the limit is for NOx + NMHC, the NOx and VOC limits shall be calculated using a ratio of 79.4% NOx to 20.6% VOC.*

6.4 g NOx+NMHC/kW-hr x 20.6% NMHC* = 1.3 grams VOC/kW-hr

Compliance with the ton per year VOC emissions limitation shall be determined by the following calculation:

1.3 g VOC/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 2500 HP = 5.34 lbs VOC/hr

5.34 lbs VOC/hr x 2640 hours/year x 1 ton/2000 lbs = 7.05 tons VOC/year

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

*This ratio is based upon the linear relationship of NOx to NMHC from Table 1 of Subpart IIII, Table 1 from 40 CFR 89.112, to Tables 4, 5, and 6 from 1039.102.

g. Sulfur Content Limitations for Diesel Fuel:

Sulfur content 15 ppm or $\leq$ 0.0015% by weight sulfur

Applicable Compliance Method:

Compliance shall be demonstrated through the record keeping requirements for the sulfur content of each shipment of diesel oil received. If meeting the standards in 40 CFR 80.510(b), this calculates to approximately 0.0015lb SO_2/MMBtu.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

h. Emission Limitations:

0.03 lb SO_2/hr and 0.04 ton of SO_2/year

Applicable Compliance Method:

Compliance with the ton per year SO_2 emissions limitation shall be determined by the following calculation:

Where:

E = pound per hour emissions

HP = horse power of engine or the sum of the horse powers of a combination of engines fitting into the same model year and size category

HP = horsepower of the engine

TPY = tons per year SO_2 emissions

E= 2500 HP x 1 gal/18 HP-hr x 7.1 lbs/gal x 64 lb moles SO_2/32 lb moles S x 0.0015% S

TPY = 0.03 x 2640 hours/year x ton/2000 lbs

The heating value of the diesel fuel may be adjusted to that provided by the supplier.

i. If it is determined by the Ohio EPA that a compliance demonstration is required through performance testing, it shall be conducted using one of the following test methods or procedures:

i. in accordance with 40 CFR 60.4212, conduct the exhaust emissions testing using the in-use testing procedures found in 40 CFR Part 1039,

Subpart F, measuring the emissions of the regulated pollutants as specified in 40 CFR 1065; or

ii. in accordance with 40 CFR 60.4213, conduct exhaust emissions testing using the test methods identified in Table 7 to Subpart IIII of Part 60.

If demonstrating compliance through the in-use testing procedures in 40 CFR part 1039, Subpart F, exhaust emissions from the stationary CI ICE shall not exceed the "not to exceed" (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112, determined from the following equation:

NTE requirement for each pollutant = 1.25 x STD

Where:

STD = The standard specified for the pollutant in 40 CFR 89.112.

[40 CFR 60.4212(a) and (c)]

g) Miscellaneous Requirements

(1) None.

2. B002, 500 HP Detriot MTU Diesel Engine

Operations, Property and/or Equipment Description:

500 HP Detroit MTU 4-stroke lean-burn compression ignition Diesel Engine subject to 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ. 2007 to 2010 model year, stationary compression ignition (CI) internal combustion engine (ICE); less than 10 liters per cylinder and greater than or equal to 175 HP and less than or equal to 750 HP; certified to 40 CFR 89.112 Tier 3 exhaust emission standards in Table 1

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

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	40 CFR Part 60, Subpart IIII 40 CFR 60.4204(b) 40 CFR 60.4201(a) Table 1 to 40 CFR 89.112, Tier 3	The exhaust emissions from this engine shall not exceed: 0.20 gram PM/kW-hr 4.0 grams NOx + NMHC/kW-hr 3.5 grams CO/kW-hr See terms b)(2)(c through e)

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
b.	40 CFR 60.4207(b) 40 CFR 80.510(b)	The sulfur content of the diesel fuel burned in this engine shall not exceed 15 ppm or 0.0015% sulfur by weight. See terms b)(2)e, c(2), d(1), and e(2).
c.	40 CFR 89.113 (certified by manufacturer)	20% opacity during the acceleration mode 15% opacity during the lugging mode 50% opacity during the peaks in either the acceleration or lugging modes
d.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the exhaust stack serving this engine shall not exceed twenty (20) percent opacity, as a six-minute average, except as specified by rule.
e.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Compliance with the applicable requirements of 40 CFR Part 60, Subpart IIII Particulate emissions (PE) from this emissions unit shall not exceed 0.16 pound per hour and 0.22 ton per year. Emissions of nitrogen oxides (NOx) shall not exceed 2.47 pounds per hour and 3.26 tons per year. Emissions of carbon monoxide (CO) shall not exceed 2.88 pounds per hour and 3.80 tons per year. Emissions of volatile organic compounds (VOC) shall not exceed 0.82 pound per hour and 1.09 tons per year. Emissions of sulfur dioxide (SO_2) shall not exceed 0.006 pound per hour and 0.008 ton per year. See b)(2)a.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b.
g.	OAC rule 3745-17-11(B)(5)	The emission limitation specified by this rule is less stringent than the emission limitation established for PE pursuant to 40 CFR Part 60, Subpart IIII.
h.	40 CFR 63 Subpart ZZZZ 40 CFR 63.6590(c)	A new area source operating in compliance with Part 60 Subpart IIII is the demonstration of compliance for 40 CFR 63 Subpart ZZZZ.

(3) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutants less than ten tons per year. However, that rule revision has not yet been approved by the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to the OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006, version of 3745-31-05, then these emission limits/control measures no longer apply.

b. This paragraph applies once U.S. EPA approves the December 1. 2006 version of OAC rule 3745-31-05, as part of the State Implementation Plan, (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions (PE), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur dioxide (SO2) from this emissions unit since the "controlled" potential to emit is less than ten tons per year.

c. The stationary compression ignition (CI) internal combustion engine (ICE) is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart IIII, the standards of performance for stationary CI ICE.

[40 CFR 60.4200(a)]

d. The stationary CI ICE has been or shall be purchased certified by the manufacturer, to emission standards as stringent as those identified in 40 CFR 60.4201(a) and found in Tier 3 of 40 CFR 89.112, Table 1, for engines greater than or equal to 175 horsepower (130 kilowatt) and less than or equal to 750 horsepower (560 kilowatt), and to the opacity standards found in 40 CFR 89.113.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4203], and [40 CFR 60.4211(c)]

e. The quality of the diesel fuel burned in this engine shall meet the following specifications on an "as received" basis:

i. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.0015 pound sulfur dioxide/MMBtu actual heat input; and 15 ppm sulfur or 0.0015% sulfur by weight;

ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent; and

iii. a heating value greater than 135,000 Btu/gallon.

Compliance with the above-mentioned specifications shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

c) Operational Restrictions

(1) The stationary CI ICE and any control device shall be installed, operated, and maintained according to the manufacturer's emission-related written instructions and the permittee shall only change those emission–related settings that are allowed by the manufacturer. The CI ICE must also be installed and operated to meet the applicable requirements from 40 CFR Part 89, Control of Emissions from New and In-use Non-road CI ICE; and Part 1068, the General Compliance Provisions for Engine Programs. The permittee shall operate and maintain the stationary CI ICE to achieve the emissions standards established in 40 CFR 60.4204 over the entire life of the engine(s).

[40 CFR 60.4206] and [40 CFR 60.4211(a)]

(2) Diesel fuel burned in the CI, ICE shall not exceed the limit for sulfur as specified by 40 CFR 80.510(b), i.e., the maximum sulfur content of diesel fuel shall not exceed 15 ppm or 0.0015% sulfur by weight.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the permittee when the high backpressure limit of the engine is approached.

[40 CFR 60.4209(b)]

(4) The permittee shall operate only one engine at a time.

(5) The maximum annual operating hours for this emissions unit shall not exceed 2,640 hours per year.

d) Monitoring and/or Recordkeeping Requirements

(1) For each shipment of oil received for burning in this engine, the permittee shall maintain records of the total quantity of the diesel oil received and the oil supplier's (or permittee's) analyses for sulfur content, in parts per million (40 CFR 80.510) or percent by weight. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR 80.580, using the appropriate ASTM methods. These records shall be retained for a minimum of 5 years and shall be available for inspection by the Director or his/her representative.

[for 40 CFR 60.4207(b)]

(2) The permittee shall maintain the manufacturer's certification, to the applicable Tier 3 emission standards in Table 1 of 40 CFR 89.112, on site or at a central location for all facility ICE and it shall be made available for review upon request. If the manufacturer's certification is not kept on site, the permittee shall maintain a log for the location of each ICE and it shall identify the agency-assigned emissions unit number, the manufacturer's identification number, and the identification number of the certificate. The manufacturer's operations manual and any written instructions or procedures developed by the permittee and approved by the manufacturer shall be maintained at the same location as the ICE.

[40 CFR 60.4211(c)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall keep records of the date, time, and any corrective action(s) taken in response to the notification from the backpressure monitor, that the high backpressure limit of the engine has been approached or exceeded.

[40 CFR 60.4214(c)]

(4) The permittee shall maintain monthly records of the operating hours for this emissions unit.

e) Reporting Requirements.

(1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit. 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.

[OAC 3745-15-03(B)(2) and (D)]

(2) The permittee shall identify in the annual permit evaluation report any period of time (date and number of hours) that the quality of oil burned in this engine did not meet the requirements established in 40 CFR 80.510(b), based upon the required fuel records; and the amount of non-compliant fuel burned on each such occasion.

For [40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall include in the PER any records of the date, time, and any corrective action(s) taken in response to the notification from the monitor that the backpressure has been approached or exceeded.

[for 40 CFR 60.4214(c)]

f) Testing Requirements

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

a. <u>Opacity Limitation</u>:

20% opacity during the acceleration mode

15% opacity during the lugging mode

50% opacity during the peaks in either the acceleration or lugging modes

<u>Applicable Compliance Method</u>:

The ICE shall be purchased certified to the opacity standards of 40 CFR 89.113.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], and [40 CFR 89.113]

b. <u>Opacity Limitation</u>:

Visible particulate emissions from the exhaust stack serving this engine shall not exceed 20% opacity, as a six-minute average, except as specified by rule.

<u>Applicable Compliance Method</u>:

If required, compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Reference Method 9 in 40 CFR, Part 60, Appendix A.

[OAC rule 3745-17-07(A)(1)]

c. Emission Limitations:

0.20 gram PM/kW-hr

0.16 lb PE/hr and 0.22 tons PE/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 175 and 750 horsepower (130 and 560 kilowatts).

Compliance with the ton per year PE emissions limitation shall be determined by the following calculation:

0.20 g PM/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 500 HP = 0.16 lb PM/hr

0.16 lb PM/hr x 2640 hours/year x 1 ton/2000 lbs = 0.22 ton PM/year

If required, the permittee shall demonstrate compliance with the PM emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

d. Emission Limitations:

4.0 grams NOx + NMHC/kW-hr

2.47 lbsNOx/hr and 3.26 tons NOx/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 175 and 750 horsepower (130 and 560 kilowatts).

For the purpose of reporting emissions, where the limit is for NOx + NMHC, the NOx and VOC limits shall be calculated using a ratio of 74.6% NOx to 25.4% VOC.*

4.0 g NOx+NMHC/kW-hr x 74.6% NOx* = 3.0 grams NOx/kW-hr

Compliance with the ton per year NOx emissions limitation shall be determined by the following calculation:

3.0 g NOx/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 500 HP = 2.47 lbsNOx/hr

2.47 lbsNOx/hr x 2640 hours/year x 1 ton/2000 lbs = 3.26 tons NOx/year

If required, the permittee shall demonstrate compliance with the NOx/NMHC emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

e. Emission Limitations:

3.5 grams CO/kW-hr

2.88 lbs CO/hr and 3.80 tons CO/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 175 and 750 horsepower (130 and 560 kilowatts).

Compliance with the ton per year CO emissions limitation shall be determined by the following calculation:

3.5 g CO/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 500 HP = 2.88 lbs CO/hr

2.88 lbs CO/hr x 2640 hours/year x 1 ton/2000 lbs = 3.80 tons CO/year

If required, the permittee shall demonstrate compliance with the CO emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)] and [40 CFR 60.4212(a) and (c)]

f. Emission Limitations:

4.0 grams NOx + NMHC/kW-hr

0.82 lb VOC/hr and 1.09 tons VOC/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between

175 and 750 horsepower (130 and 560 kilowatts).

For the purpose of reporting emissions, where the limit is for NOx + NMHC, the NOx and VOC limits shall be calculated using a ratio of 74.6% NOx to 25.4% VOC.*

4.0 g NOx+NMHC/kW-hr x 25.4% NMHC* = 1.0 gram VOC/kW-hr

Compliance with the ton per year VOC emissions limitation shall be determined by the following calculation:

1.0 g VOC/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 500 HP = 0.82 lb VOC/hr

0.82 lb VOC/hr x 2640 hours/year x 1 ton/2000 lbs = 1.09 tons VOC/year

If required, the permittee shall demonstrate compliance with the NOx/NMHC emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

*This ratio is based upon the linear relationship of NOx to NMHC from Table 1 of Subpart IIII, Table 1 from 40 CFR 89.112, to Tables 4, 5, and 6 from 1039.102.

g. <u>Sulfur Content Limitations for Diesel Fuel</u>:

Sulfur content 15 ppm or $\leq$ 0.0015% by weight sulfur

0.006 lb SO_2/hr and 0.008 ton of SO_2/year

<u>Applicable Compliance Method</u>:

Compliance shall be demonstrated through the record keeping requirements for the sulfur content of each shipment of diesel oil received. If meeting the standards in 40 CFR 80.510(b), the annual emissions would be calculated as follows:

Using a maximum density for diesel fuel oil to equal 7.1 lbs/gallon and a heating value of 137,000 Btu/gallon the maximum SO^2 emissions would not exceed:

(7.1 lbs/gal) x (gal/0.137 MMBtu) x (0.0015% S) x (64 lb mole SO_2/32 lb mole S) x (Btu/hr) = 0.006lb SO_2/hr

0.006lb SO_2/hr x 2640 hours/year x 1 ton/2000 lbs = 0.008 ton SO_2/year

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

The heating value of the diesel fuel may be adjusted to that provided by the supplier.

h. If it is determined by the Ohio EPA that a compliance demonstration is required through performance testing, it shall be conducted using one of the following test methods or procedures:

i. in accordance with 40 CFR 60.4212, conduct the exhaust emissions testing using the in-use testing procedures found in 40 CFR Part 1039, Subpart F, measuring the emissions of the regulated pollutants as specified in 40 CFR 1065; or

ii. in accordance with 40 CFR 60.4213, conduct exhaust emissions testing using the test methods identified in Table 7 to Subpart IIII of Part 60.

If demonstrating compliance through the in-use testing procedures in 40 CFR part 1039, Subpart F, exhaust emissions from the stationary CI ICE shall not exceed the "not to exceed" (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112, determined from the following equation:

NTE requirement for each pollutant = 1.25 x STD

Where:

STD = The standard specified for the pollutant in 40 CFR 89.112.

[40 CFR 60.4212(a) and (c)]

g) Miscellaneous Requirements

(1) None.

3. B003, 174 HP Deutz Diesel Engine

Operations, Property and/or Equipment Description:

174 HP Deutz model 319 4-stroke lean-burn compression ignition Diesel Engine subject to 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ. 2007 to 2011 model year, stationary compression ignition (CI) internal combustion engine (ICE); less than 10 liters per cylinder and greater than or equal to 100 HP and less than 175 HP; certified to the 40 CFR 89.112 Tier 3 exhaust emission standards in Table 1

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

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	40 CFR Part 60, Subpart IIII 40 CFR 60.4204(b) 40 CFR 60.4201(a) Table 1 to 40 CFR 89.112, Tier 3	The exhaust emissions from this engine shall not exceed: 0.30 gram PM/kW-hr 4.0 grams NOx + NMHC/kW-hr 5.0 grams CO/kW-hr See terms b)(2)(c through e)

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
b.	40 CFR 60.4207(b) 40 CFR 80.510(b)	The sulfur content of the diesel fuel burned in this engine shall not exceed 15 ppm or 0.0015% sulfur by weight. See terms b)(2)e, c(2), d(1), and e(2).
c.	40 CFR 89.113 (certified by manufacturer)	20% opacity during the acceleration mode 15% opacity during the lugging mode 50% opacity during the peaks in either the acceleration or lugging modes
d.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the exhaust stack serving this engine shall not exceed twenty (20) percent opacity, as a six-minute average, except as specified by rule.
e.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Compliance with the applicable requirements of 40 CFR Part 60, Subpart IIII Particulate emissions (PE) from this emissions unit shall not exceed 0.09 pound per hour and 0.11 ton per year. Emissions of nitrogen oxides (NOx) shall not exceed 0.88 pound per hour and 1.13 tons per year. Emissions of carbon monoxide (CO) shall not exceed 1.43 pounds per hour and 1.89 tons per year. Emissions of volatile organic compounds (VOC) shall not exceed 0.29 pound per hour and 0.38 ton per year. Emissions of sulfur dioxide (SO_2) shall not exceed 0.0021 pound per hour and 0.003 ton per year. See b)(2)a.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b.
g.	OAC rule 3745-17-11(B)(5)	The emission limitation specified by this rule is less stringent than the emission limitation established for PE pursuant to 40 CFR Part 60, Subpart IIII.
h.	40 CFR 63 Subpart ZZZZ 40 CFR 63.6590(c)	A new area source operating in compliance with Part 60 Subpart IIII is the demonstration of compliance for 40 CFR 63 Subpart ZZZZ.

(3) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutants less than ten tons per year. However, that rule revision has not yet been approved by the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to the OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006, version of 3745-31-05, then these emission limits/control measures no longer apply.

b. This paragraph applies once U.S. EPA approves the December 1. 2006 version of OAC rule 3745-31-05, as part of the State Implementation Plan, (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions (PE), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur dioxide (SO2) from this emissions unit since the "controlled" potential to emit is less than ten tons per year.

c. The stationary compression ignition (CI) internal combustion engine (ICE) is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart IIII, the standards of performance for stationary CI ICE.

[40 CFR 60.4200(a)]

d. The stationary CI ICE has been or shall be purchased certified by the manufacturer to emission standards as stringent as those identified in 40 CFR 60.4201(a) and found in Tier 3 of 40 CFR 89.112, Table 1, for engines greater than or equal to 100 horsepower (75 kilowatt) and less than 175 horsepower (130 kilowatt), and certified to the opacity standards found in 40 CFR 89.113.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4203], and [40 CFR 60.4211(c)]

e. The quality of the diesel fuel burned in this engine shall meet the following specifications on an "as received" basis:

i. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.0015 pound sulfur dioxide/MMBtu actual heat input; and 15 ppm sulfur or 0.0015% sulfur by weight;

ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent; and

iii. a heating value greater than 135,000 Btu/gallon.

Compliance with the above-mentioned specifications shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

c) Operational Restrictions

(1) The stationary CI ICE and any control device shall be installed, operated, and maintained according to the manufacturer's emission-related written instructions and the permittee shall only change those emission–related settings that are allowed by the manufacturer. The CI ICE must also be installed and operated to meet the applicable requirements from 40 CFR Part 89, Control of Emissions from New and In-use Non-road CI ICE; and Part 1068, the General Compliance Provisions for Engine Programs. The permittee shall operate and maintain the stationary CI ICE to achieve the emissions standards established in 40 CFR 60.4204 over the entire life of the engine(s).

[40 CFR 60.4206] and [40 CFR 60.4211(a)]

(2) Diesel fuel burned in the CI, ICE shall not exceed the limit for sulfur as specified by 40 CFR 80.510(b), i.e., the maximum sulfur content of diesel fuel shall not exceed 15 ppm or 0.0015% sulfur by weight.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the permittee when the high backpressure limit of the engine is approached.

[40 CFR 60.4209(b)]

(4) The permittee shall operate only one engine at a time.

(5) The maximum annual operating hours for this emissions unit shall not exceed 2,640 hours per year.

d) Monitoring and/or Recordkeeping Requirements

(1) For each shipment of oil received for burning in this engine, the permittee shall maintain records of the total quantity of the diesel oil received and the oil supplier's (or permittee's) analyses for sulfur content, in parts per million (40 CFR 80.510) or percent by weight. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR 80.580, using the appropriate ASTM methods. These records shall be retained for a minimum of 5 years and shall be available for inspection by the Director or his/her representative.

[for 40 CFR 60.4207(b)]

(2) The permittee shall maintain the manufacturer's certification, to the applicable Tier 3 emission standards in Table 1 of 40 CFR 89.112, on site or at a central location for all facility ICE and it shall be made available for review upon request. If the manufacturer's certification is not kept on site, the permittee shall maintain a log for the location of each ICE and it shall identify the agency-assigned emissions unit number, the manufacturer's identification number, and the identification number of the certificate. The manufacturer's operations manual and any written instructions or procedures developed by the permittee and approved by the manufacturer shall be maintained at the same location as the ICE.

[40 CFR 60.4211(c)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall keep records of the date, time, and any corrective action(s) taken in response to the notification from the backpressure monitor, that the high backpressure limit of the engine has been approached or exceeded.

[40 CFR 60.4214(c)]

(4) The permittee shall maintain monthly records of the operating hours for this emissions unit.

e) Reporting Requirements.

(1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit. 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.

[OAC 3745-15-03(B)(2) and (D)]

(2) The permittee shall identify in the annual permit evaluation report any period of time (date and number of hours) that the quality of oil burned in this engine did not meet the requirements established in 40 CFR 80.510(b), based upon the required fuel records; and the amount of non-compliant fuel burned on each such occasion.

For [40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

(3) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall include in the PER any records of the date, time, and any corrective action(s) taken in response to the notification from the monitor that the backpressure has been approached or exceeded.

[for 40 CFR 60.4214(c)]

f) Testing Requirements

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

a. <u>Opacity Limitation</u>:

20% opacity during the acceleration mode

15% opacity during the lugging mode

50% opacity during the peaks in either the acceleration or lugging modes

<u>Applicable Compliance Method</u>:

The ICE shall be purchased certified to the opacity standards of 40 CFR 89.113.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], and [40 CFR 89.113]

b. <u>Opacity Limitation</u>:

Visible particulate emissions from the exhaust stack serving this engine shall not exceed 20% opacity, as a six-minute average, except as specified by rule.

<u>Applicable Compliance Method</u>:

If required, compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Reference Method 9 in 40 CFR, Part 60, Appendix A.

[OAC rule 3745-17-07(A)(1)]

c. Emission Limitations:

0.30 gram PM/kW-hr

0.09 lb PE/hr and 0.11 ton PE/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 100 and less than 175 horsepower (75 and 130 kilowatts).

Compliance with the ton per year PE emissions limitation shall be determined by the following calculation:

0.30 g PM/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 174 HP = 0.09 lb PM/hr

0.09 lb PM/hr x 2640 hours/year x 1 ton/2000 lbs = 0.11 ton PM/year

If required, the permittee shall demonstrate compliance with the PM emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

d. Emission Limitations:

4.0 grams NOx + NMHC/kW-hr

0.88 lbNOx/hr and 1.13 tons NOx/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 100 and less than 175 horsepower (75 and 130 kilowatts).

For the purpose of reporting emissions, where the limit is for NOx + NMHC, the NOx and VOC limits shall be calculated using a ratio of 74.6% NOx to 25.4% VOC.*

4.0 g NOx+NMHC/kW-hr x 74.6% NOx* = 3.0 grams NOx/kW-hr

Compliance with the ton per year NOx emissions limitation shall be determined by the following calculation:

3.0 g NOx/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 174 HP = 0.88 lbNOx/hr

0.88 lbNOx/hr x 2640 hours/year x 1 ton/2000 lbs = 1.13 tons NOx/year

If required, the permittee shall demonstrate compliance with the NOx/NMHC emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

e. Emission Limitations:

5.0 grams CO/kW-hr

1.43 lbs CO/hr and 1.89 tons CO/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 100 and less than 175 horsepower (75 and 130 kilowatts).

Compliance with the ton per year CO emissions limitation shall be determined by the following calculation:

5.0 g CO/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 174 HP = 1.43 lbs CO/hr

1.43 lbs CO/hr x 2640 hours/year x 1 ton/2000 lbs = 1.89 tons CO/year

If required, the permittee shall demonstrate compliance with the CO emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

f. Emission Limitations:

4.0 grams NOx + NMHC/kW-hr

0.29 lb VOC/hr and 0.38 ton VOC/year

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between

100 and less than 175 horsepower (75 and 130 kilowatts).

For the purpose of reporting emissions, where the limit is for NOx + NMHC, the NOx and VOC limits shall be calculated using a ratio of 74.6% NOx to 25.4% VOC.*

4.0 g NOx+NMHC/kW-hr x 25.4% NMHC* = 1.0 gram VOC/kW-hr

Compliance with the ton per year VOC emissions limitation shall be determined by the following calculation:

1.0 g VOC/kw-hr x kw/1.341 HP x 1 lb/453.6 g x 174 HP = 0.29 lb VOC/hr

0.29 lb VOC/hr x 2640 hours/year x 1 ton/2000 lbs = 0.38 ton VOC/year

If required, the permittee shall demonstrate compliance with the NOx/NMHC emission limitation through performance tests conducted in accordance with the provisions in term f)(1)i below.

[40 CFR 60.4204(b)], [40 CFR 60.4201(a)], [40 CFR 60.4211(c)], and [40 CFR 60.4212(a) and (c)]

*This ratio is based upon the linear relationship of NOx to NMHC from Table 1 of Subpart IIII, Table 1 from 40 CFR 89.112, to Tables 4, 5, and 6 from 1039.102.

g. Sulfur Content Limitations for Diesel Fuel:

Sulfur content 15 ppm or $\leq$ 0.0015% by weight sulfur

Applicable Compliance Method:

Compliance shall be demonstrated through the record keeping requirements for the sulfur content of each shipment of diesel oil received. If meeting the standards in 40 CFR 80.510(b), this calculates to approximately 0.0015lb SO_2/MMBtu.

[40 CFR 60.4207(b)] and [40 CFR 80.510(b)]

h. Emission Limitations:

0.0021 lb SO_2/hr and 0.003 ton of SO_2/year

Applicable Compliance Method:

Compliance with the ton per year SO_2 emissions limitation shall be determined by the following calculation:

Where:

E = pound per hour emissions

HP = horse power of engine or the sum of the horse powers of a combination of engines fitting into the same model year and size category

HP = horsepower of the engine

TPY = tons per year SO_2 emissions

E= 174 HP x 1 gal/18 HP-hr x 7.1 lbs/gal x 64 lb moles SO_2/32 lb moles S x 0.0015% S

TPY = 0.0021 x 2640 hours/year x ton/2000 lbs

The heating value of the diesel fuel may be adjusted to that provided by the supplier.

i. If it is determined by the Ohio EPA that a compliance demonstration is required through performance testing, it shall be conducted using one of the following test methods or procedures:

   i. in accordance with 40 CFR 60.4212, conduct the exhaust emissions testing using the in-use testing procedures found in 40 CFR Part 1039, Subpart F, measuring the emissions of the regulated pollutants as specified in 40 CFR 1065; or

   ii. in accordance with 40 CFR 60.4213, conduct exhaust emissions testing using the test methods identified in Table 7 to Subpart IIII of Part 60.

   If demonstrating compliance through the in-use testing procedures in 40 CFR part 1039, Subpart F, exhaust emissions from the stationary CI ICE shall not exceed the “not to exceed” (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112, determined from the following equation:

   NTE requirement for each pollutant = 1.25 x STD

   Where:

   STD = The standard specified for the pollutant in 40 CFR 89.112.

   [40 CFR 60.4212(a) and (c)]

g) Miscellaneous Requirements

(1) None.