



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

10/10/2013

Michael StClair
The Ohio State University
Environmental Health & Safety
1314 Kinnear Road
COLUMBUS, OH 43212-1168

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0125042608
Permit Number: P0115528
Permit Type: Administrative Modification
County: Franklin

Certified Mail

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. 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 PTI 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, Central District Office at (614)728-3778 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA
Ohio EPA-CDO



FINAL

**Division of Air Pollution Control
Permit-to-Install
for
The Ohio State University**

Facility ID:	0125042608
Permit Number:	P0115528
Permit Type:	Administrative Modification
Issued:	10/10/2013
Effective:	10/10/2013



Division of Air Pollution Control
Permit-to-Install
for
The Ohio State University

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Authorization

Facility ID: 0125042608
Facility Description: Colleges, universities and professional schools.
Application Number(s): M0002410, M0002411
Permit Number: P0115528
Permit Description: B132, B140, B141, B142 and B143 received an administrative modification to PTI P0105626 remove rescinded rules OAC rules 3745-23-06(C)(1)-(2), 3745-21-07(B), and 3745-21-08(B).
Permit Type: Administrative Modification
Permit Fee: \$0.00
Issue Date: 10/10/2013
Effective Date: 10/10/2013

This document constitutes issuance to:

The Ohio State University
2003 MILLIKIN ROAD
COLUMBUS, OH 43210-1268

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

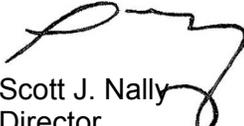
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

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

The above named entity is hereby granted a Permit-to-Install for the 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 emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Scott J. Nally
Director



Authorization (continued)

Permit Number: P0115528
 Permit Description: B132, B140, B141, B142 and B143 received an administrative modification to PTI P0105626 remove rescinded rules OAC rules 3745-23-06(C)(1)-(2), 3745-21-07(B), and 3745-21-08(B).

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

Emissions Unit ID: B132
 Company Equipment ID: BOILER #5
 Superseded Permit Number: P0105626
 General Permit Category and Type: Not Applicable

Group Name: C.A.R. Lab

Emissions Unit ID:	B138
Company Equipment ID:	C.A.R.Lab #1
Superseded Permit Number:	01-08695
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	B139
Company Equipment ID:	C.A.R.Lab #2
Superseded Permit Number:	01-08695
General Permit Category and Type:	Not Applicable

Group Name: McCracken Boilers

Emissions Unit ID:	B140
Company Equipment ID:	McCracken New Boiler #1
Superseded Permit Number:	P0105626
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	B141
Company Equipment ID:	McCracken New Boiler #3
Superseded Permit Number:	P0105626
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	B142
Company Equipment ID:	McCracken New Boiler #6
Superseded Permit Number:	P0105626
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	B143
Company Equipment ID:	McCracken New Boiler #7
Superseded Permit Number:	P0105626
General Permit Category and Type:	Not Applicable



Final Permit-to-Install
The Ohio State University
Permit Number: P0115528
Facility ID: 0125042608
Effective Date: 10/10/2013

A. Standard Terms and Conditions



1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

- a) The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.



- b) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d) This permit does not convey any property rights of any sort, or any exclusive privilege.
- e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

4. Monitoring and Related Record Keeping and Reporting Requirements

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) The operating conditions existing at the time of sampling or measurement.
- b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Central District Office.



- (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Ohio EPA DAPC, Central District Office. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
 - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the Ohio EPA DAPC, Central District Office every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
 - (4) This permit is for an emissions unit located at a Title V facility. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Ohio EPA DAPC, Central District Office in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

6. Compliance Requirements

- a) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.



- c) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
 - (1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- d) The permittee shall submit progress reports to the Ohio EPA DAPC, Central District Office concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
 - (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Ohio EPA DAPC, Central District Office.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have



been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA DAPC, Central District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

10. Applicability

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

11. Construction of New Sources(s) and Authorization to Install

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., 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) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).



- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., 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). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

No emissions unit certified by the authorized official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

13. Construction Compliance Certification

The applicant shall identify the following dates in the online facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.



15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in Air Services once the transfer is legally completed. The change must be submitted through Air Services within thirty days of the ownership transfer date.

18. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

19. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.



Final Permit-to-Install
The Ohio State University
Permit Number: P0115528
Facility ID: 0125042608
Effective Date: 10/10/2013

B. Facility-Wide Terms and Conditions



Final Permit-to-Install
The Ohio State University
Permit Number: P0115528
Facility ID: 0125042608
Effective Date: 10/10/2013

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.



Final Permit-to-Install
The Ohio State University
Permit Number: P0115528
Facility ID: 0125042608
Effective Date: 10/10/2013

C. Emissions Unit Terms and Conditions



1. B132, BOILER #5

Operations, Property and/or Equipment Description:

Boiler 5 - gas/oil fired water tube boiler with low NOx burner. Boiler 5 is rated 313.1mmBtu/hr when firing natural gas and 300.1 mmBtu/hr when firing fuel oil.

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) [Established by PTI P0105626, issued final 05/26/10]	Nitrogen oxides (NOx) emissions shall not exceed 0.036 lb/mmBtu when firing natural gas and 0.12 lb/mmBtu when firing number 2 distillate fuel oil. NOx emissions shall not exceed 103.52 tons per year when firing natural gas and/or number 2 distillate fuel oil. Carbon monoxide (CO) emissions shall not exceed 0.072 lb/mmBtu when firing natural gas and 0.17 lb/mmBtu when firing number 2 distillate fuel oil. CO emissions shall not exceed 161.04 tons per year when firing natural gas and/or number 2 distillate fuel oil. Particulate emissions (PE) shall not exceed 0.007 lb/mmBtu when firing natural gas and 0.0196 lb/mmBtu when firing number 2 distillate fuel oil. PE shall not exceed 17.68 tons per year when firing natural gas and/or number 2 distillate fuel oil.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Volatile organic compound (VOC) emissions shall not exceed 0.008 lb/mmBtu when firing natural gas and 0.009 lb/mmBtu when firing number 2 distillate fuel oil.</p> <p>VOC emissions shall not exceed 11.40 tons per year when firing natural gas and/or number 2 distillate fuel oil.</p> <p>Sulfur dioxide (SO₂) emissions shall not exceed 0.0006 lb/mmBtu when firing natural gas and 0.056 lb/mmBtu when firing number 2 distillate fuel oil.</p> <p>SO₂ emissions shall not exceed 37.80 tons per year when firing natural gas and/or number 2 distillate fuel oil.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and 40 CFR Part 60, Subpart Db.</p> <p>See c)(3) below.</p>
b.	OAC rule 3745-18-06(D) OAC rule 3745-17-10(B)(1) 40 CFR Part 60.44b	The emission limitations established pursuant to OAC rule 3745-31-05(A)(3) are more stringent than the emissions limitations established by these rules.
c.	40 CFR Part 60, Subpart Db	When firing number 2 distillate fuel oil, visible PE shall not exceed 20% opacity, as a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity, and because this emissions unit employs a high heat release rate as defined in 40 CFR Part 60.41b, the NO _x emissions heat input limitation shall not exceed 0.2 lb/mmBtu expressed as NO ₂ .
d.	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a 6-minute average when firing natural gas, except as provided by rule.
e.	OAC rule 3745-31-13(D)(1)	See b)(2)a.
f.	40 CFR 63.52(a)(2)	See b)(2)e.



(2) Additional Terms and Conditions

- a. As a non-profit education institution, the permittee requested and received a discretionary exemption from the Director on March 14, 2003, to exempt this emissions unit from the PSD requirements contained in OAC rules 3745-31-10 through 3745-31-20.
- b. This emissions unit is subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.
- c. Each continuous NOx predictive emissions monitoring system shall be certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16. At least 45 days before commencing certification testing of the NOx predictive emissions monitoring system(s), the permittee shall develop and maintain a written quality assurance/quality control plan designed to ensure continuous valid and representative readings of NOx predictive emissions continuous monitor(s), in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16. The quality assurance/quality control plan and a logbook dedicated to the continuous NOx predictive emissions monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct daily sensor evaluations; to conduct quarterly relative accuracy audits; and to conduct yearly relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60, Appendix B, Performance Specification 16.

[Authority for term: 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 16]

- d. The predictive emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes all sensors, algorithms, and data recording/processing hardware and software. Any change to algorithms used to predict NOx emissions shall require new certification testing of the NOx predictive emissions monitoring systems.

[Authority for term: 40 CFR 60.2 and Appendix B to 40 CFR Part 60]

- e. The permittee shall comply with the applicable provisions of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, as promulgated by the United States Environmental Protection Agency under 40 CFR Part 63, Subpart DDDDD. The final rules found in 40 CFR Part 63, Subpart DDDDD establish national emission standards for hazardous air pollutants (NESHAP), operational limits, work practice standards, and compliance requirements for industrial, commercial, and institutional boilers and process heaters located at a



major source of hazardous air pollutants (HAP). The permittee shall comply with the requirements and limits of this NESHAP for the facility's new (commenced construction after 6/4/10) process heaters by the compliance date identified in 40 CFR 63.7495(a) or upon startup; and the facility's existing process heaters shall be in compliance with 40 CFR Part 63, Subpart DDDDD no later than the compliance date identified in 40 CFR 63.7495(b).

[Authority for term: 40 CFR 63.52(a)(2)]

c) Operational Restrictions

- (1) The maximum annual fuel oil usage for this emissions unit shall not exceed 9,526,500 gallons.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (2) The quality of the number 2 distillate fuel oil burned in this emissions unit shall meet, on an as-received basis, a sulfur content which is equal to or less than 0.5 weight percent sulfur and is sufficient to comply with the allowable sulfur dioxide emission limitation specified in b)(1) above.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (3) The permittee shall operate low NO_x burners and employ flue gas recirculation at all times this emissions unit is in operation.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (4) The permittee shall operate and maintain equipment to continuously monitor and record the opacity of the particulate emissions from this emissions unit when combusting number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (5) The permittee shall operate and maintain predictive monitoring equipment to continuously predict and record the NO_x emissions from this emissions unit when combusting natural gas and/or number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (6) The permittee shall burn only natural gas and/or number 2 distillate fuel oil in this emissions unit.

[Authority for term: OAC rule 3745-77-07(A)(1)]

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 oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance



with the formula specified in OAC rule 3745-18-04(F).) A shipment may be comprised of multiple tank truck loads from the same supplier's batch, or may be represented by single or multiple pipeline deliveries from the same supplier's batch, and the quality of the oil for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

[Authority for term: OAC rule 3745-77-07(C)]

- (2) The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240 and D4294), or equivalent methods as approved by the Director.

The permittee shall maintain records of the oil burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.

a. Alternative 1:

For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).) A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of oil that is burned in this emissions unit for each day when the emissions unit is in operation. If additional fuel oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to develop a composite sample representative of the fuel oil burned in this emissions unit. A representative grab sample of oil does not need to be collected on days when this emissions unit is only operated for the purpose of "test-firing." The permittee shall maintain records of the total quantity of oil burned each day, except for the purpose of testfiring, the permittee's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).)

[Authority for term: OAC rule 3745-77-07(C)]

- (3) For each day during which the permittee burns a fuel other than natural gas or number 2 distillate fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

[Authority for term: OAC rule 3745-77-07(C)]



- (4) The permittee shall maintain daily records of the following information:
- the natural gas consumption for each day (in million cubic feet);
 - the number 2 distillate fuel oil consumption for each day (in gallons);
 - the total actual heat input to the emissions unit, calculated as follows:

$$DI = DI_g + DI_o$$

DI = Total heat input for each day, mmBtu
DI_g = Daily heat input rate from Gas
DI_o = Daily heat input rate from Oil

When the unit is combusting natural gas, use the following equation to calculate heat input rate:

$$DI_g = (Q_g * GCV_g) / 10^3$$

Where:

DI_g = Daily heat input rate from pipeline natural gas, mmBtu/day.
Q_g = Metered flow rate of gaseous fuel combusted during unit operation, thousand standard cubic feet per day.
GCV_g = Gross calorific value of natural gas, as determined by sampling (for each monthly sample of pipeline natural gas, or as verified by the contractual supplier at least once every month pipeline natural gas is combusted) using ASTM D1826-88, ASTM D3588-91, ASTM D4891-89, GPA Standard 2172-86 "Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis," or GPA Standard 2261-90 "Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography," Btu/scf.
10³ = Conversion of thousand Btu to mmBtu.

When the unit is combusting oil, use the following equation to calculate hourly heat input rate:

$$DI_o = V_{oil-rate} * D_{oil} * (GCV_o / 10^6)$$

Where:

DI_o = Daily heat input rate from oil, mmBtu/day.
V_{oil-rate} = Volume rate of oil consumed per day, measured in gal/day
D_{oil} = Density of oil, measured in lb/gal
GCV_o = Gross calorific value of oil, as measured by ASTM D240-87, ASTM D2015-91, or ASTM D2382-88 for each batch of oil burned, Btu/unit mass, in lbs.
10⁶ = Conversion of Btu to mmBtu.

- the rolling, 30-day average NOx emission rate, in pounds per mmBtu, when firing natural gas; and



- e. the rolling, 30-day average NO_x emission rate, in pounds per mmBtu, when firing number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(C)]

- (5) The permittee shall collect and record the following information for the purpose of determining annual mass emissions:
 - a. the amount of natural gas used (in million cubic feet);
 - b. the amount of number 2 distillate fuel oil used (in gallons); and
 - c. the total amount of mass annual emissions of each pollutant listed in b)(1) emitted from this emissions unit, in pounds or tons.

[Authority for term: OAC rule 3745-77-07(C)]

- (6) The permittee shall operate and maintain existing equipment to continuously monitor and record the opacity of the particulate emissions from this emissions unit when combusting number 2 distillate fuel oil. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain records of the following data obtained by the continuous opacity monitoring system: percent opacity on a 6-minute average basis, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

[Authority for term: OAC rule 3745-77-07(C)]

- (7) The permittee shall maintain a certification letter from the Ohio EPA documenting that the existing continuous opacity monitoring system has been certified in accordance with the requirements of 40 CFR part 60, Appendix B, Performance Specification 1. The letter of certification shall be made available to the Director upon request.

[Authority for term: OAC rule 3745-77-07(C)]

- (8) The permittee shall maintain and implement a written quality assurance/quality control plan for the continuous opacity monitoring system designed to ensure continuous valid and representative readings of opacity and compliance with 40 CFR Part 60, Appendix B, Performance Specification 1. The plan shall include, as a minimum, conducting and recording daily automatic zero/span checks, provisions for conducting a quarterly audit of the continuous opacity monitoring system, and a description of preventive maintenance activities. The plan shall describe step by step procedures for ensuring that Performance Specification 1 is maintained on a continuous basis. The quality assurance/quality control plan and a logbook dedicated to the continuous opacity monitoring system must be kept on site and available for inspection during regular office hours.

[Authority for term: OAC rule 3745-77-07(C)]

- (9) The permittee shall calculate the annual capacity factor each calendar year as defined in 40 CFR Part 60.41b individually for each fuel burned pursuant to 40 CFR Part



60.49b.(d). The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

[Authority for term: OAC rule 3745-77-07(C)]

- (10) The Ohio EPA, Central Office shall approve the initial certification testing protocol, and shall review all initial certification testing data. Upon a satisfactory review of the initial certification testing data, Ohio EPA shall acknowledge that the NO_x predictive emissions monitoring system meets the requirements of Performance Specification 16 by sending a Certification Letter. Once received, the letter/document of certification shall be maintained on-site and shall be made available to the Director (the appropriate Ohio EPA District Office or local air agency) upon request.

Initial certification of the B132 PEMs was granted in a letter dated April 13, 2010, by Ohio EPA, Central Office, Division of Air Pollution Control.

The predictive emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes all sensors, algorithms, and data recording/processing hardware and software.

[Authority for term: OAC rule 3745-77-07(C) and 40 CFR 60.13 and 40 CFR Part 60, Appendix B]

- (11) The permittee shall install, operate, and maintain equipment to continuously predict and record NO_x emissions from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of data obtained by the continuous NO_x monitoring system including, but not limited to:

- a. predicted emissions of NO_x in parts per million on an instantaneous (one-minute) basis;
- b. predicted emissions of a diluents (O₂ or CO₂) in percent on an instantaneous (one-minute) basis;
- c. predicted flow rates of the emissions stream, in dry standard cubic feet per minute (this is required only for NO_x predictive emissions monitoring systems that are being used to demonstrate compliance with a NO_x pound-per-hour limit.);
- d. emissions of NO_x in all units of the applicable standard(s) in the appropriate averaging period;
- e. results of quarterly relative accuracy audits;
- f. results of daily sensor checks and a list of adjustments or repairs/replacements that are made;



- g. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
- h. hours of operation of the emissions unit, NOx predictive emissions monitoring system, and control equipment;
- i. the date, time, and hours of operation of the emissions unit without the control equipment and/or the NOx predictive emissions monitoring system;
- j. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the NOx predictive emissions monitoring system; as well as,
- k. the reason (if known) and the corrective actions taken (if any) for each such event in i. and j.

[Authority for term: OAC rule 3745-77-07(C) and 40 CFR 60.13 and 40 CFR Part 60, Appendix B]

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (2) The permittee shall notify the Director (the Ohio EPA, Central District Office) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates and any record which shows a deviation of the allowable sulfur content. The notification shall include a copy of such record and shall be set to the Director (the Ohio EPA, Central District Office) within 45 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (3) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or number 2 distillate fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (4) The permittee shall submit reports (hardcopy or electronic format) within 30 days following the end of each calendar quarter to the Ohio EPA, Central District Office documenting all instances of opacity values in excess of the limitations specified above when firing number 2 distillate fuel oil, detailing the date, commencement and completion times, duration, magnitude (percent opacity), reason (if known), and corrective action(s) taken (if any) of each 6-minute block average above the applicable opacity limitation(s).



The reports shall also identify any continuous opacity monitoring system downtime while the emissions unit was on line (date, time, duration and reason) when firing number 2 distillate fuel oil, along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions until and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the date, time, reason, and corrective action(s) taken for each time period of monitoring system malfunction. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report.

These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (5) The permittee shall submit reports (hardcopy or electronic format) within 30 days following the end of each calendar quarter to the Ohio EPA, Central District Office documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective action(s) taken (if any), of all 30-day average NOx values in excess of the applicable NOx emission rate (pound per mmBtu).

The reports shall also identify any predictive NOx monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions until and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the date, time, reason, and corrective action(s) taken for each time period of monitoring system malfunction. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report.

These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]



- (6) The permittee shall submit quarterly reports of the following information:
- a. certifying that only very low sulfur oil meeting the definition in 40 CFR Part 60.41b was combusted in this emissions unit during the preceding quarter;
 - b. if the certification specified in e)(5)a. is not submitted, then the permittee shall submit the following information along with the appropriate information contained within 40 CFR Part 60.49b(k):
 - i. the number of hourly averages available for outlet emissions rates and inlet emissions rates;
 - ii. the standard deviation of hourly averages for outlet emissions rates and inlet rates, as determined in 40 CFR Part 60, Subpart A, Method 19, section 7;
 - iii. the lower confidence limit for the mean outlet emission rate and upper confidence limit for the mean inlet emission rate, as calculated in 40 CFR Part 60, Subpart A, Method 19, section 7; and
 - iv. the ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as calculated in 40 CFR Part 60, Subpart A, Method 19, section 7.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (7) The permittee shall submit annual reports that specify the total particulate, SO₂, VOC, NO_x, CO emissions and natural gas and fuel oil usages for this emissions unit for the previous calendar year. These reports shall be submitted by January 30 of each year.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (8) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its NO_x predictive emissions monitoring system:
- a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of NO_x predicted emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapters 3745-14 and 3745-23, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).
 - b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:



- i. the facility name and address;
- ii. the manufacturer, model number, and serial number of the NOx predictive emissions monitoring systems;
- iii. a description of any change in the equipment that comprises the predictive emission monitoring system, including any change to the hardware, and/or changes to the software in the predictive algorithms;
- iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above;
- v. the total NOx emissions for the calendar quarter (tons);
- vi. the total operating time (hours) of the emissions unit;
- vii. the total operating time of the NOx predictive emissions monitoring system while the emissions unit was in operation;
- viii. results and dates of quarterly relative accuracy audits;
- ix. unless previously submitted, the results of any relative accuracy test audit showing the NOx predictive emissions monitor out-of-control and the compliant results following any corrective actions;
- x. the date, time, and duration of any/each malfunction** of the NOx predictive monitoring system, emissions unit, and/or control equipment;
- xi. the date, time, and duration of any downtime** of the NOx predictive emissions monitoring system and/or control equipment while the emissions unit was in operation; and
- xii. the reason (if known) and the corrective actions taken (if any) for each event in x. and xi.

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report.

** each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit.

[Authority for tem: OAC rule 3745-77-07(A)(3)(c) and 40 CFR 60.7]



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. The permittee performed an initial certification test for each predictive emissions monitoring system in accordance with the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16 in November 2009. Annual recertification testing shall be performed in accordance with and at the frequencies required by 40 CFR Part 60, Appendix B, Performance Specification 16 and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the appropriate Ohio EPA District Office or local air agency and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the NO_x predictive emissions monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16 and ORC section 3704.03(I).

Initial certification of the B140, B141, B142, and B143 PEMs was granted in a letter dated January 25, 2010, by Ohio EPA, Central Office, Division of Air Pollution Control.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR 60.13 and 40 CFR Part 60, Appendix B]

b. Within 60 days after achieving the maximum production rate at which these emissions units will be operated, but not later than 180 days after its initial startup, the permittee shall conduct performance tests to demonstrate compliance with the particulate emission limitation and NO_x emission limitation while firing number 2 distillate fuel oil. The permittee has completed this test.

The particulate emission test shall be conducted in accordance with the procedures specified in 40 CFR Parts 60.8 and 60.46b(d). The test shall be conducted while the emissions units are operating at or near its maximum capacity, while firing number 2 distillate fuel oil.

The NO_x performance test shall be conducted using the NO_x monitoring system in accordance with the procedures specified in 40 CFR Parts 60.8 and 60.46b(e). The test shall be conducted while the emissions unit is operating at or near its maximum capacity, while firing number 2 distillate fuel oil.



- c. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).
- d. A comprehensive written report on the results of the emission(s) test(s) shall be submitted to the Ohio EPA, Central District Office within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Central District Office.
- e. Personnel from the Ohio EPA, Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions units and the testing procedures provide a valid characterization of the emissions from the emissions units and/or the performance of the control equipment.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (2) 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 Limitation(s):

NOx emissions shall not exceed 0.036 lb/mmBtu of actual heat input while firing natural gas and 0.12 lb/mmBtu of actual heat input while firing number 2 distillate fuel oil.

- Applicable Compliance Method(s):

When firing number 2 distillate fuel oil, compliance with the emissions limitations shall be demonstrated on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NOx emission data for the preceding 30 steam generating unit operating days.

When firing natural gas, compliance with the emissions limitations shall be demonstrated on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NOx emission data for the preceding 30 steam generating unit operating days.

If required, the permittee shall demonstrate compliance with these emission limitations through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7.



[Authority for term: OAC rule 3745-77-07(C)(1)]

b. Emission Limitation(s):

NOx emissions shall not exceed 103.52 tons per year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The annual natural gas emissions shall be determined by multiplying the predictive emissions monitoring system emission data (lbsNOx/mmBtu) by the average annual natural gas heat content (Btu/cu ft) by the annual natural gas usage (mmcuft/yr) and dividing by 2,000 lbs/ton.

The annual number 2 distillate fuel oil emissions shall be determined by multiplying the predictive emissions monitoring system emission data (lbsNOx/mmBtu) by the average annual number 2 distillate fuel oil heat content (Btu/gal) by the annual number 2 distillate fuel oil usage (gal/yr) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

c. Emission Limitation(s):

CO emissions shall not exceed 0.072 lb/mmBtu of actual heat input while firing natural gas and 0.17 lb/mmBtu of actual heat input while firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

When firing natural gas, compliance shall be demonstrated by multiplying the maximum hourly gas burning capacity of the emission unit (302,512 cu ft/hr) by the emission factor supplied by the boiler manufacturer (Babcock and Wilcox, 04/29/2001) for CO in natural gas combustion (74.5 lbs CO/mmcuft) and dividing by the maximum hourly heat input capacity of the emission unit (313 mmBtu/hr).

When firing number 2 distillate fuel oil, compliance shall be demonstrated with the boiler manufacturer's emission factor data (0.17 lb/mmBtu, Babcock and Wilcox, 04/24/1998).

If required, the permittee shall demonstrate compliance with this emission limitation through emission test performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

[Authority for term: OAC rule 3745-77-07(C)(1)]



d. Emission Limitation(s):

CO emissions shall not exceed 161.04 tons per year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The annual natural gas emissions shall be determined by multiplying annual natural gas usage (cu ft/yr) by the emission factor supplied by the boiler manufacturer (Babcock and Wilcox, 04/29/2001) for CO in natural gas combustion (74.5 lbs of CO/mmcf) and dividing by 2,000 lbs/ton.

The annual number 2 distillate fuel oil emissions shall be determined by multiplying annual number 2 distillate fuel oil usage (gal/yr) by the heat content of the oil (Btu/gal) by the emission factor supplied by the boiler manufacturer (Babcock and Wilcox, 04/24/1998) for CO in number 2 distillate fuel oil combustion (0.17 lb CO/mmBtu) and dividing by 2,000 lbs/ton and by 1,000,000 Btu/mmBtu.

[Authority for term: OAC rule 3745-77-07(C)(1)]

e. Emission Limitation(s):

PE shall not exceed 0.007 lb/mmBtu of actual heat input when firing natural gas and 0.0196 lb/mmBtu of actual heat input when firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

When firing natural gas, compliance shall be demonstrated by multiplying the maximum hourly gas burning capacity of the emissions unit (302,512 cu ft/hr) by the boiler manufacturer's emission factor (Babcock and Wilcox, 04/24/1998) for PE in natural gas combustion (7.25 lbs PE/mmcf) and dividing by the maximum hourly heat input capacity of the emissions unit (313 mmBtu/hr).

When firing number 2 distillate fuel oil, compliance shall be demonstrated by the most recent emission test.

If required, the permittee shall demonstrate compliance with this emission limitation through emission test performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

[Authority for term: OAC rule 3745-77-07(C)(1)]

f. Emission Limitation(s):

PE shall not exceed 17.68 tons per year when firing natural gas and/or number 2 distillate fuel oil.



Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The natural gas annual emissions shall be determined by multiplying the annual natural gas usage (mmcuft/yr) by the boiler manufacturer's emission factor (Babcock and Wilcox, 04/24/1998) for PE in natural gas combustion (7.25 lbs PE/mmcuft), and dividing by 2,000 pounds per ton.

The number 2 fuel oil emissions shall be determined by multiplying the emission factor established during the most recent emission test that demonstrated compliance (lbs PE/mmBtu) by the annual number 2 fuel oil usage (gal/yr) by the annual average fuel oil heating value (Btu/gal) and dividing by 1,000,000 Btu/mmBtu and by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

g. Emission Limitation(s):

VOC emissions shall not exceed 0.008 lb/mmBtu of actual heat input when firing natural gas and 0.009 lb/mmBtu of actual heat input when firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

When firing natural gas, compliance shall be demonstrated by multiplying the maximum hourly gas burning capacity of the emissions unit (302,512 cu ft/hr) by the boiler manufacturer's emission factor (Babcock and Wilcox, 04/24/1998) for volatile organic compounds in natural gas combustion (8.28 lbs VOC/mmcuft), and dividing by the maximum hourly heat input capacity of the emissions unit (313 mmBtu/hr).

When firing number 2 distillate fuel oil, compliance with this emission limitation may be demonstrated by multiplying the maximum fuel oil burning capacity of the emissions unit (2,144 gal/hr) by the boiler manufacturer's emission factor (Babcock and Wilcox, 04/24/1998) for volatile organic compounds in number 2 distillate fuel oil combustion (1.26 lbs VOC/1000 gal), and dividing by the maximum hourly heat input capacity of the emissions unit (300.1 mmBtu/hr).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25.

[Authority for term: OAC rule 3745-77-07(C)(1)]

h. Emission Limitation(s):

VOC shall not exceed 11.40 tons/year when firing natural gas and/or number 2 distillate fuel oil.



Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The natural gas annual emissions shall be determined by multiplying the annual natural gas usage (cu ft/yr) by the boiler manufacturer's emission factor (Babcock and Wilcox, 04/24/1998) for volatile organic compounds in natural gas combustion (8.28 lbs VOC/mmcf), and dividing by 2,000 pounds per ton.

The number 2 distillate fuel oil emissions shall be determined by multiplying the annual number 2 distillate fuel oil usage (gal) by the boiler manufacturer's emission factor (Babcock and Wilcox, 04/24/1998) for volatile organic compounds in number 2 distillate fuel oil combustion (1.26 lbs VOC/1000 gal), and dividing by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

i. Emission Limitation(s):

SO₂ emissions shall not exceed 0.0006 lb/mmBtu of actual heat input when firing natural gas and 0.056 lb/mmBtu of actual heat input when firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

When firing fuel oil, compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by documenting that the sulfur content of each shipment of oil received during a calendar month meets the limitation.

When firing natural gas, compliance with this limitation will be assumed due to the negligible percent sulfur, by weight, in the fuel.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6, while firing number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(C)(1)]

j. Emission Limitation(s):

SO₂ emissions shall not exceed 37.80 tons/year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.



The natural gas annual emissions shall be determined by multiplying the annual natural gas usage (cu ft/yr) by the emission factor from AP-42 Table 1.4-2 (07/1998) for SO₂ in natural gas combustion (0.6 lb SO₂/mmcuft), and dividing by 2,000 pounds per ton.

When firing number 2 distillate fuel oil compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by multiplying the annual number 2 distillate fuel oil consumption (gal/year) by the emission factor of 142*S lbs SO₂/1,000 gal, where S equals sulfur content (from AP-42, Table 1.3-1, 04/2000) and dividing by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

k. Emission Limitation(s):

Visible PE shall not exceed 20% opacity, as a 6-minute average when firing natural gas, except as provided by rule.

Applicable Compliance Method(s):

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

[Authority for term: OAC rule 3745-77-07(C)(1)]

l. Emission Limitation(s):

Visible PE shall not exceed 20% opacity, as a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity when firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance may be determined by data collected and recorded for the COM and, if required, by visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.

[Authority for term: OAC rule 3745-77-07(C)(1)]

g) **Miscellaneous Requirements**

- (1) Per the permittee's air permit to install application dated January 2003, the permittee shall comply with all applicable provisions of OAC rule 3745-14 for emissions unit B132 if appropriate, including but not limited to, certain NO_x emissions limitations in the emissions trading program, obtain permits, comply with trading procedures and meet the monitoring and reporting requirements in this rule. See B.2. and B.3. in the facility-wide terms and conditions section of this permit.



2. Emissions Unit Group -C.A.R. Lab: B138,B139,

EU ID	Operations, Property and/or Equipment Description
B138	300 HP Engine Dynamometer Lab 1
B139	190 HP Engine Dynamometer Lab 2

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) [Established by PTI 01-08695, issued final 03/25/03]	Volatile organic compound (VOC) emissions shall not exceed 10.66 pounds per day (lbs/day) and 0.69 tons per year (tpy). Carbon monoxide (CO) emissions shall not exceed 101.52 lbs/day and 6.60 tpy. Nitrogen oxide (NOx) emissions shall not exceed 7.34 lbs/day and 0.48 tpy. Sulfur dioxide (SO2) emissions shall not exceed 0.38 lb/day and 0.02 tpy. Particulate emissions (PE) shall not exceed 0.47 lb/day and 0.03 tpy. Visible particulate emissions shall not exceed 20% opacity as a 6-minute average. The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-31-05(D)	CO emissions shall not exceed 6.60 tons per year, based on a rolling 12-month summation of the monthly CO emissions.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See c)(1) – (2)
c.	OAC rule 3745-17-07(A)	See b)(2)a.
d.	OAC rule 3745-17-11(B)(1)	See b)(2)b.
e.	OAC rule 3745-18-06	See b)(2)c.

(2) Additional Terms and Conditions

- a. This emissions unit is exempt from the visible particulate emission limitations specified in OAC rule 3745-17-07(A) pursuant to OAC rule 3745-17-07(A)(3)(h) because the emissions unit is not subject to the requirements of OAC rule 3745-17-11.
- b. The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour. Therefore, pursuant to OAC rule 3745-17-11(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11, does not apply because the process weight, as defined in OAC rule 3745-17-01(B)(14), is equal to zero.
- c. The emissions unit is exempt from the requirements of OAC rule 3745-18-06 pursuant to OAC rule 3745-18-06(B).

c) Operational Restrictions

- (1) The maximum daily fuel usage for this emissions unit shall not exceed 72 gallons of gasoline per day.
[Authority for term: OAC rule 3745-77-07(A)(1)]
- (2) The maximum annual fuel usage for this emissions unit shall not exceed 9,360 gallons of gasoline based on a rolling, 12-month summation of the monthly gasoline fuel usages.
[Authority for term: OAC rule 3745-77-07(A)(1)]

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain records of the following information:
 - a. the daily gasoline usage for this emissions unit (gallons);
 - b. the monthly gasoline usage for this emissions unit (gallons);
 - c. the rolling, 12-month summation of the monthly gasoline fuel usages for this emissions unit (gallons);
 - d. the monthly carbon monoxide emissions for this emissions unit (tons); and



- e. the rolling, 12-month summation of the monthly carbon monoxide emissions for this emissions unit.

[Authority for term: OAC rule 3745-77-07(C)]

- (2) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the vent 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 emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operation, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

The visible emissions check is not required to be performed by individuals certified to conduct U.S. EPA Reference Method 9 observations.

[Authority for term: OAC rule 3745-77-07(C)]

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (2) The permittee shall submit quarterly deviation (excursion) reports that include the following information:
 - a. exceedances of the daily and rolling, 12-month fuel usage;
 - b. exceedances of the rolling, 12-month summation of carbon monoxide emission limitation;
 - c. identify all days during which any visible particulate emissions were observed from the vent serving this emissions unit; and
 - d. any corrective actions taken to eliminate the visible particulate emissions.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.



[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (3) The permittee shall submit annual reports that specify the total emissions of particulates, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide from this emissions unit for the previous calendar year. The reports shall be submitted by April 15th of each year. The reporting requirement may be satisfied by including and identifying the specific emission data from this emissions unit in the annual Fee Emission Report.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

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 Limitation(s):

VOC emissions shall not exceed 10.66 lbs/day and 0.69 tpy

Applicable Compliance Method(s):

Compliance with the short term limitation shall be demonstrated by multiplying the emission factor of 148.00 pounds of VOC per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum daily gasoline usage of 72 gallons per day. Compliance with the long term limitation shall be demonstrated by multiplying the emission factor of 148.00 pounds of VOC per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum annual gasoline usage of 9,360 gallons per year and dividing by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

b. Emission Limitation(s):

CO emissions shall not exceed 101.52 lbs/day and 6.60 tpy

Applicable Compliance Method(s):

Compliance with the short term limitation shall be demonstrated by multiplying the emission factor of 1,410 pounds of CO per 1,000 gallons of gasoline burned (emissions test conducted 06/05/02) by the maximum daily gasoline usage of 72 gallons per day. Compliance with the long term limitation shall be demonstrated by multiplying the emission factor of 1,410 pounds of CO per 1,000 gallons of gasoline burned (emissions test conducted 06/05/02) by the maximum annual gasoline usage of 9,360 gallons per year and dividing by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]



c. Emission Limitation(s):

NOx emission shall not exceed 7.34 lbs/day and 0.48 tpy

Applicable Compliance Method(s):

Compliance with the short term limitation shall be demonstrated by multiplying the emission factor of 102.00 pounds of NOx per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum daily gasoline usage of 72 gallons per day. Compliance with the long term limitation shall be demonstrated by multiplying the emission factor of 102.00 pounds of NOx per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum annual gasoline usage of 9,360 gallons per year and dividing by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

d. Emission Limitation(s):

SO2 emissions shall not exceed 0.38 lb/day and 0.02 tpy

Applicable Compliance Method(s):

Compliance with the short term limitation shall be demonstrated by multiplying the emission factor of 5.31 pounds of SO2 per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum daily gasoline usage of 72 gallons per day. Compliance with the long term limitation shall be demonstrated by multiplying the emission factor of 5.31 pounds of NOx per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum annual gasoline usage of 9,360 gallons per year and dividing by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

e. Emission Limitation(s):

PE shall not exceed 0.47 lb/day and 0.03 tpy

Applicable Compliance Method(s):

Compliance with the short term limitation shall be demonstrated by multiplying the emission factor of 6.47 pounds of PE per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum daily gasoline usage of 72 gallons per day. Compliance with the long term limitation shall be demonstrated by multiplying the emission factor of 6.47 pounds of PE per 1,000 gallons of gasoline burned (U.S. EPA's Factor Information Retrieval Data System (FIRE) Version 6.23) by the maximum annual gasoline usage of 9,360 gallons per year and dividing by 2,000 pounds per ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]



f. Emission Limitation(s):

Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average.

Applicable Compliance Method(s):

Compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.

[Authority for term: OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.



3. Emissions Unit Group -McCracken Boilers: B140,B141,B142,B143,

EU ID	Operations, Property and/or Equipment Description
B140	New Boiler 1 - 206 mmBtu/hr gas/oil fired water tube boiler with low NOx burner
B141	New Boiler 3 - 206 mmBtu/hr gas/oil fired water tube boiler with low NOx burner
B142	New Boiler 6 - 206 mmBtu/hr gas/oil fired water tube boiler with low NOx burner
B143	New Boiler 7 - 206 mmBtu/hr gas/oil fired water tube boiler with low NOx burner

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) [Established by P0105626, issued final 05/26/10]	<p>Nitrogen oxides (NOx) emissions shall not exceed 0.035 lb/mmBtu when firing natural gas and 0.10 lb/mmBtu when firing number 2 distillate fuel oil.</p> <p>NOx emissions shall not exceed 59.15 tons per year when firing natural gas and/or number 2 distillate fuel oil.</p> <p>Carbon monoxide (CO) emissions shall not exceed 0.04 lb/mmBtu when firing natural gas and 0.08 lb/mmBtu when firing number 2 distillate fuel oil.</p> <p>CO emissions shall not exceed 52.74 tons per year when firing natural gas and/or number 2 distillate fuel oil.</p> <p>Particulate emissions (PE) shall not exceed 0.005 lb/mmBtu when firing natural gas and 0.02 lb/mmBtu when firing number 2 distillate fuel oil.</p> <p>PE shall not exceed 10.93 tons per year when firing natural gas and/or number 2</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>distillate fuel oil.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.004 lb/mmBtu when firing natural gas and 0.004 lb/mmBtu when firing number 2 distillate fuel oil.</p> <p>VOC emissions shall not exceed 3.54 tons per year when firing natural gas and/or number 2 distillate fuel oil.</p> <p>Sulfur dioxide (SO₂) emissions shall not exceed 0.0006 lb/mmBtu when firing natural gas and 0.052 lb/mmBtu when firing number 2 distillate fuel oil.</p> <p>SO₂ emissions shall not exceed 22.82 tons per year when firing natural gas and/or number 2 distillate fuel oil.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and 40 CFR Part 60, Subpart Db.</p> <p>See c)(3)</p>
b.	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a 6-minute average when firing natural gas, except as provided by rule.
c.	40 CFR Part 60, Subpart Db	Visible PE shall not exceed 20% opacity, as a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity, when firing number 2 distillate fuel oil.
d.	OAC rule 3745-31-13(D)(1)	See b)(2)a.
e.	OAC rule 3745-17-10(B)(1) OAC rule 3745-18-06(D)	The emission limitations established pursuant to OAC rule 3745-31-05(A)(3) are more stringent than the emission limitations established by these rules.
f.	40 CFR 63.52(a)(2)	See b)(2)e.

(2) Additional Terms and Conditions

- a. As a non-profit education institution, the permittee requested and received a discretionary exemption from the Director on March 14, 2003, to exempt this



emissions unit from the PSD requirements contained in OAC rules 3745-31-10 through 3745-31-20.

- b. These emissions units are subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60. The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.
- c. Each continuous NOx predictive emissions monitoring system shall be certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16. At least 45 days before commencing certification testing of the NOx predictive emissions monitoring system(s), the permittee shall develop and maintain a written quality assurance/quality control plan designed to ensure continuous valid and representative readings of NOx predictive emissions continuous monitor(s), in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16. The quality assurance/quality control plan and a logbook dedicated to the continuous NOx predictive emissions monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct daily sensor evaluations; to conduct quarterly relative accuracy audits; and to conduct yearly relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60, Appendix B, Performance Specification 16.

[Authority for term: 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 16]

- d. The predictive emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes all sensors, algorithms, and data recording/processing hardware and software. Any change to algorithms used to predict NOx emissions shall require new certification testing of the NOx predictive emissions monitoring systems.

[Authority for term: 40 CFR 60.2 and Appendix B to 40 CFR Part 60]

- e. The permittee shall comply with the applicable provisions of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, as promulgated by the United States Environmental Protection Agency under 40 CFR Part 63, Subpart DDDDD. The final rules found in 40 CFR Part 63, Subpart DDDDD establish national emission standards for hazardous air pollutants (NESHAP), operational limits, work practice standards, and compliance requirements for industrial, commercial, and institutional boilers and process heaters located at a major source of hazardous air pollutants (HAP). The permittee shall comply with the requirements and limits of this NESHAP for the facility's new (commenced construction after 6/4/10) process heaters by the compliance date identified in 40 CFR 63.7495(a) or upon startup; and the facility's existing process heaters shall



be in compliance with 40 CFR Part 63, Subpart DDDDD no later than the compliance date identified in 40 CFR 63.7495(b).

[Authority for term: 40 CFR 63.52(a)(2)]

c) Operational Restrictions

- (1) The maximum annual fuel oil usage for each emissions unit shall not exceed 6,285,300 gallons.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (2) The quality of the number 2 distillate fuel oil burned in these emissions units shall meet, on an as-received basis, a sulfur content which is equal to or less than 0.5 weight percent sulfur and is sufficient to comply with the allowable sulfur dioxide emission limitation specified in b)(1) above.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (3) The permittee shall operate low NO_x burners and employ flue gas recirculation at all times these emissions units are in operation.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (4) The permittee shall operate and maintain equipment to continuously monitor and record the opacity of the particulate emissions from these emissions units when combusting number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (5) The permittee shall operate and maintain predictive monitoring equipment to continuously predict and record the NO_x emissions from this emissions unit when combusting natural gas and/or number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (6) The permittee shall burn only natural gas and/or number 2 distillate fuel oil in these emissions units.

[Authority for term: OAC rule 3745-77-07(A)(1)]

d) Monitoring and/or Recordkeeping Requirements

- (1) For each shipment of oil received for burning in these emissions units, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).) A shipment may be comprised of multiple tank truck loads from the same supplier's batch, or may be represented by single or multiple pipeline deliveries from the same supplier's batch, and the quality of



the oil for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

[Authority for term: OAC rule 3745-77-07(C)]

- (2) The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240 and D4294), or equivalent methods as approved by the Director.

The permittee shall maintain records of the oil burned in each emissions unit in accordance with either Alternative 1 or Alternative 2 described below.

a. Alternative 1:

For each shipment of oil received for burning in these emissions units, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).) A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

b. Alternative 2:

For each emissions unit, the permittee shall collect a representative grab sample of oil that is burned in the emissions unit for each day when the emissions unit is in operation. If additional fuel oil is added to the tank serving the emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to develop a composite sample representative of the fuel oil burned in the emissions unit. A representative grab sample of oil does not need to be collected on days when the emissions unit is only operated for the purpose of "test-firing." The permittee shall maintain records of the total quantity of oil burned each day, except for the purpose of test-firing, the permittee's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).)

[Authority for term: OAC rule 3745-77-07(C)]

- (3) For each day during which the permittee burns a fuel other than natural gas or number 2 distillate fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

[Authority for term: OAC rule 3745-77-07(C)]

- (4) The permittee shall maintain daily records of the following information for each emissions unit:



- a. the natural gas consumption for each day (in million cubic feet);
- b. the number 2 distillate fuel oil consumption for each day (in gallons);
- c. the total actual heat input to the emissions unit, calculated as follows:

$$DI = DI_g + DI_o$$

DI = Total heat input for each day, mmBtu

DI_g = Daily heat input rate from Gas

DI_o = Daily heat input rate from Oil

When the unit is combusting natural gas, use the following equation to calculate heat input rate:

$$DI_g = (Q_g * GCV_g) / 10^3$$

Where:

DI_g = Daily heat input rate from pipeline natural gas, mmBtu/day.

Q_g = Metered flow rate of gaseous fuel combusted during unit operation, thousand standard cubic feet per day.

GCV_g = Gross calorific value of natural gas, as determined by sampling (for each monthly sample of pipeline natural gas, or as verified by the contractual supplier at least once every month pipeline natural gas is combusted) using ASTM D1826-88, ASTM D3588-91, ASTM D4891-89, GPA Standard 2172-86 "Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis," or GPA Standard 2261-90 "Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography," Btu/scf.

10³ = Conversion of thousand Btu to mmBtu.

When the unit is combusting oil, use the following equation to calculate hourly heat input rate:

$$DI_o = V_{oil-rate} * D_{oil} * (GCV_o / 10^6)$$

Where:

DI_o = Daily heat input rate from oil, mmBtu/day.

V_{oil-rate} = Volume rate of oil consumed per day, measured in gal/day

D_{oil} = Density of oil, measured in lb/gal

GCV_o = Gross calorific value of oil, as measured by ASTM D240-87, ASTM D2015-91, or ASTM D2382-88 for each batch of oil burned, Btu/unit mass, in lbs.

10⁶ = Conversion of Btu to mmBtu.

- d. beginning after the initial compliance demonstration, the rolling, 30-day average NOx emission rate, in pounds per mmBtu, when firing natural gas; and



- e. beginning after the initial compliance demonstration, the rolling, 30-day average NOx emission rate, in pounds per mmBtu, when firing number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(C)]

- (5) The permittee shall collect and record the following information for the purpose of determining annual mass emissions for each emissions unit:
 - a. the amount of natural gas used (in million cubic feet);
 - b. the amount of number 2 distillate fuel oil used (in gallons); and
 - c. the total amount of mass annual emissions of each pollutant listed in b)(1) emitted from the emissions unit, in pounds or tons.

[Authority for term: OAC rule 3745-77-07(C)]

- (6) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the opacity of the particulate emissions from each emissions unit when combusting number 2 distillate fuel oil. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

Prior to the installation of the continuous opacity monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirement in 40 CFR Part 60, Appendix B, Performance Specification 1 for approval by the Ohio EPA, Central Office.

The permittee shall maintain records of the following data obtained by the continuous opacity monitoring system: percent opacity on a 6-minute average basis, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

[Authority for term: OAC rule 3745-77-07(C)]

- (7) Within 60 days after achieving the maximum production rate at which these emissions units will be operated, but not later than 180 days after its initial startup, the permittee shall conduct certification tests on the continuous opacity monitoring system equipment pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 1. Personnel from the Ohio EPA, Central District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to the Ohio EPA, Central District Office pursuant to OAC rule 3745-15-04 within 30 days after the test is completed. Certification of the continuous opacity monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 1.

[Authority for term: OAC rule 3745-77-07(C)]

- (8) The permittee shall maintain and implement a written quality assurance/quality control plan for the continuous opacity monitoring system designed to ensure continuous valid and representative readings of opacity and compliance with 40 CFR Part 60, Appendix B,



Performance Specification 1. The plan shall include, as a minimum, conducting and recording daily automatic zero/span checks, provisions for conducting a quarterly audit of the continuous opacity monitoring system, and a description of preventive maintenance activities. The plan shall describe step by step procedures for ensuring that Performance Specification 1 is maintained on a continuous basis. The quality assurance/quality control plan and a logbook dedicated to the continuous opacity monitoring system must be kept on site and available for inspection during regular office hours.

[Authority for term: OAC rule 3745-77-07(C)]

- (9) The permittee shall calculate the annual capacity factor each calendar year as defined in 40 CFR Part 60.41b individually for each fuel burned pursuant to 40 CFR Part 60.49b.(d). The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

[Authority for term: OAC rule 3745-77-07(C)]

- (10) The Ohio EPA, Central Office shall approve the initial certification testing protocol, and shall review all initial certification testing data. Upon a satisfactory review of the initial certification testing data, Ohio EPA shall acknowledge that the NO_x predictive emissions monitoring system meets the requirements of Performance Specification 16 by sending a Certification Letter. Once received, the letter/document of certification shall be maintained on-site and shall be made available to the Director (the appropriate Ohio EPA District Office or local air agency) upon request.

Initial certification of the B140, B141, B142, and B143 PEMs was granted in a letter dated January 25, 2010, by Ohio EPA, Central Office, Division of Air Pollution Control.

The predictive emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes all sensors, algorithms, and data recording/processing hardware and software.

[Authority for term: OAC rule 3745-77-07(C) and 40 CFR 60.13 and 40 CFR Part 60, Appendix B]

- (11) The permittee shall install, operate, and maintain equipment to continuously predict and record NO_x emissions from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of data obtained by the continuous NO_x monitoring system including, but not limited to:

- a. predicted emissions of NO_x in parts per million on an instantaneous (one-minute) basis;
- b. predicted emissions of a diluents (O₂ or CO₂) in percent on an instantaneous (one-minute) basis;



- c. predicted flow rates of the emissions stream, in dry standard cubic feet per minute (this is required only for NOx predictive emissions monitoring systems that are being used to demonstrate compliance with a NOx pound-per-hour limit.);
- d. emissions of NOx in all units of the applicable standard(s) in the appropriate averaging period;
- e. results of quarterly relative accuracy audits;
- f. results of daily sensor checks and a list of adjustments or repairs/replacements that are made;
- g. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
- h. hours of operation of the emissions unit, NOx predictive emissions monitoring system, and control equipment;
- i. the date, time, and hours of operation of the emissions unit without the control equipment and/or the NOx predictive emissions monitoring system;
- j. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the NOx predictive emissions monitoring system; as well as,
- k. the reason (if known) and the corrective actions taken (if any) for each such event in i. and j.

[Authority for term: OAC rule 3745-77-07(C) and 40 CFR 60.13 and 40 CFR Part 60, Appendix B]

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (2) Pursuant to the NSPS, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:
 - a. construction date (no later than 30 days after such date);
 - b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
 - c. actual start-up date (within 15 days after such date); and
 - d. date of performance testing (If required, at least 30 days prior to testing).



Reports are to be sent to:

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

and

Ohio EPA, Central District Office
Air Pollution Group
P.O. Box 1049
Columbus, OH 43216-1049

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (3) The permittee shall notify the Director (the Ohio EPA, Central District Office) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates and any record which shows a deviation of the allowable sulfur content. The notification shall include a copy of such record and shall be set to the Director (the Ohio EPA, Central District Office) within 45 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (4) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or number 2 distillate fuel oil was burned in these emissions units. Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (5) Pursuant to 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports (hardcopy or electronic format) within 30 days following the end of each calendar quarter to the Ohio EPA, Central District Office documenting all instances of opacity values in excess of the limitations specified above when firing number 2 distillate fuel oil, detailing the date, commencement and completion times, duration, magnitude (percent opacity), reason (if known), and corrective action(s) taken (if any) of each 6-minute block average above the applicable opacity limitation(s).

For each emissions unit, the reports shall also identify any continuous opacity monitoring system downtime while the emissions unit was on line (date, time, duration and reason) when firing number 2 distillate fuel oil, along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the date, time, reason, and corrective action(s)



taken for each time period of monitoring system malfunction. The total operating time of each emissions unit and the total operating time of the analyzer while each emissions unit was on line also shall be included in the quarterly report.

These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (6) Pursuant to OAC rule 3745-15-04 and ORC sections 3704.03(I) and 3704.031, the permittee shall submit reports (hardcopy or electronic format) within 30 days following the end of each calendar quarter to the Ohio EPA, Central District Office documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective action(s) taken (if any), of all 30-day average NO_x values in excess of the applicable NO_x emission rate (pound per mmBtu).

The reports shall also identify any predictive NO_x monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions until and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the date, time, reason, and corrective action(s) taken for each time period of monitoring system malfunction. The total operating time of each emissions unit and the total operating time of the analyzer while each emissions unit was on line also shall be included in the quarterly report.

These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (7) The permittee shall submit quarterly reports of the following information:
- a. certifying that only very low sulfur oil meeting the definition in 40 CFR Part 60.41b was combusted in these emissions units during the preceding quarter;
 - b. if the certification in e)(6)a. is not submitted, then the permittee shall submit the following information along with the appropriate information contained within 40 CFR Part 60.49b(k):
 - i. the number of hourly averages available for outlet emissions rates and inlet emissions rates;



- ii. the standard deviation of hourly averages for outlet emissions rates and inlet rates, as determined in 40 CFR Part 60, Subpart A, Method 19, section 7;
- iii. the lower confidence limit for the mean outlet emission rate and upper confidence limit for the mean inlet emission rate, as calculated in 40 CFR Part 60, Subpart A, Method 19, section 7; and
- iv. the ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as calculated in 40 CFR Part 60, Subpart A, Method 19, section 7.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (8) The permittee shall submit annual reports that specify the total particulate, SO₂, VOC, NO_x and CO emissions and natural gas and fuel oil usages for these emissions units for the previous calendar year. These reports shall be submitted by January 30 of each year.

[Authority for term: OAC rule 3745-77-07(A)(3)(c)]

- (9) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its NO_x predictive emissions monitoring system:
 - a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of NO_x predicted emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapters 3745-14 and 3745-23, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).
 - b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
 - i. the facility name and address;
 - ii. the manufacturer, model number, and serial number of the NO_x predictive emissions monitoring systems;
 - iii. a description of any change in the equipment that comprises the predictive emission monitoring system, including any change to the hardware, and/or changes to the software in the predictive algorithms;
 - iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above;



- v. the total NOx emissions for the calendar quarter (tons);
- vi. the total operating time (hours) of the emissions unit;
- vii. the total operating time of the NOx predictive emissions monitoring system while the emissions unit was in operation;
- viii. results and dates of quarterly relative accuracy audits;
- ix. unless previously submitted, the results of any relative accuracy test audit showing the NOx predictive emissions monitor out-of-control and the compliant results following any corrective actions;
- x. the date, time, and duration of any/each malfunction** of the NOx predictive monitoring system, emissions unit, and/or control equipment;
- xi. the date, time, and duration of any downtime** of the NOx predictive emissions monitoring system and/or control equipment while the emissions unit was in operation; and
- xii. the reason (if known) and the corrective actions taken (if any) for each event in x. and xi.

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report.

** each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit.

[Authority for term: OAC rule 3745-77-07(A)(3)(c) and 40 CFR 60.7]

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. The permittee performed an initial certification test for each predictive emissions monitoring system in accordance with the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16 in November 2009. Annual recertification testing shall be performed in accordance with and at the frequencies required by 40 CFR Part 60, Appendix B, Performance Specification 16 and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the appropriate Ohio EPA District Office or local air agency shall be notified 30 days prior to initiation of the



applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the appropriate Ohio EPA District Office or local air agency and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the NO_x predictive emissions monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specification 16 and ORC section 3704.03(I).

Initial certification of the B140, B141, B142, and B143 PEMs was granted in a letter dated January 25, 2010, by Ohio EPA, Central Office, Division of Air Pollution Control.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR 60.13 and 40 CFR Part 60, Appendix B]

- b. Within 60 days after achieving the maximum production rate at which these emissions units will be operated, but not later than 180 days after its initial startup, the permittee shall conduct performance tests to demonstrate compliance with the particulate emission limitation and NO_x emission limitation while firing number 2 distillate fuel oil. The permittee has completed this test.

The particulate emission test shall be conducted in accordance with the procedures specified in 40 CFR Parts 60.8 and 60.46b(d). The test shall be conducted while the emissions units are operating at or near its maximum capacity, while firing number 2 distillate fuel oil.

The NO_x performance test shall be conducted using the NO_x monitoring system in accordance with the procedures specified in 40 CFR Parts 60.8 and 60.46b(e). The test shall be conducted while the emissions unit is operating at or near its maximum capacity, while firing number 2 distillate fuel oil.

- c. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).
- d. A comprehensive written report on the results of the emission(s) test(s) shall be submitted to the Ohio EPA, Central District Office within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Central District Office.
- e. Personnel from the Ohio EPA, Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and



information necessary to ensure that the operation of the emissions units and the testing procedures provide a valid characterization of the emissions from the emissions units and/or the performance of the control equipment.

[Authority for term: OAC rule 3745-77-07(C)(1)]

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

a. Emission Limitation(s):

Nitrogen oxide (NO_x) emissions shall not exceed 0.035 lb/mmBtu of actual heat input while firing natural gas and 0.10 lb/mmBtu of actual heat input while firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

Following the initial performance test, when firing number 2 distillate fuel oil, compliance with the emissions limitations shall be demonstrated on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_x emission data for the preceding 30 steam generating unit operating days.

When firing natural gas, compliance with the emissions limitations shall be demonstrated on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_x emission data for the preceding 30 steam generating unit operating days.

[Authority for term: OAC rule 3745-77-07(C)(1)]

b. Emission Limitation(s):

Nitrogen oxide (NO_x) emissions shall not exceed 59.15 tons per year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The annual natural gas emissions shall be determined by multiplying the predictive emissions monitoring system emission data (lbsNO_x/mmBtu) by the average annual natural gas heat content (Btu/cu ft) by the annual natural gas usage (mmcuft/yr) and dividing by 2,000 lbs/ton.

The annual number 2 distillate fuel oil emissions shall be determined by multiplying the predictive emissions monitoring system emission data (lbsNO_x/mmBtu) by the average annual number 2 distillate fuel oil heat content



(Btu/gal) by the annual number 2 distillate fuel oil usage (gal/yr) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

c. Emission Limitation(s):

Carbon monoxide (CO) emissions shall not exceed 0.04 lb/mmBtu of actual heat input while firing natural gas and 0.08 lb/mmBtu of actual heat input while firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated with the boiler manufacturer's emission factor data: 0.04 lb/mmBtu for natural gas and 0.08 lb/mmBtu for number 2 distillate fuel oil (Nebraska Boiler Company, 08/28/2002).

If required, the permittee shall demonstrate compliance with this emission limitation through emission test performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

[Authority for term: OAC rule 3745-77-07(C)(1)]

d. Emission Limitation(s):

Carbon monoxide (CO) emissions shall not exceed 52.74 tons per year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The annual natural gas emissions shall be determined by multiplying annual natural gas usage (cu ft/yr) by the heat content of the gas (Btu/cu ft) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for CO in natural gas combustion (0.04 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

The annual number 2 distillate fuel oil emissions shall be determined by multiplying annual number 2 distillate fuel oil usage (gal/yr) by the heat content of the oil (Btu/gal) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for CO in number 2 distillate fuel oil combustion (0.08 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]



e. Emission Limitation(s):

Particulate emissions (PE) shall not exceed 0.005 lb/mmBtu of actual heat input when firing natural gas and 0.02 lb/mmBtu of actual heat input when firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated with the boiler manufacturer's emission factor data: 0.005 lb/mmBtu for natural gas and 0.02 lb/mmBtu for number 2 distillate fuel oil (Nebraska Boiler Company, 08/28/2002).

[Authority for term: OAC rule 3745-77-07(C)(1)]

f. Emission Limitation(s):

Particulate emissions (PE) shall not exceed 10.93 tons per year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The annual natural gas emissions shall be determined by multiplying annual natural gas usage (cu ft/yr) by the heat content of the gas (Btu/cu ft) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for PE in natural gas combustion (0.005 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

The annual number 2 distillate fuel oil emissions shall be determined by multiplying annual number 2 distillate fuel oil usage (gal/yr) by the heat content of the oil (Btu/gal) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for PE in number 2 distillate fuel oil combustion (0.02 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

g. Emission Limitation(s):

Volatile organic compound (VOC) emissions shall not exceed 0.004 lb/mmBtu of actual heat input when firing natural gas and 0.004 lb/mmBtu of actual heat input when firing number 2 distillate fuel oil.



Applicable Compliance Method(s):

Compliance shall be demonstrated with the boiler manufacturer's emission factor data: 0.004 lb/mmBtu for natural gas and 0.004 lb/mmBtu for number 2 distillate fuel oil (Nebraska Boiler Company, 08/28/2002).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25.

[Authority for term: OAC rule 3745-77-07(C)(1)]

h. Emission Limitation(s):

Volatile organic compound emissions (VOC) shall not exceed 3.54 tons/year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The annual natural gas emissions shall be determined by multiplying annual natural gas usage (cu ft/yr) by the heat content of the gas (Btu/cu ft) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for VOC in natural gas combustion (0.004 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

The annual number 2 distillate fuel oil emissions shall be determined by multiplying annual number 2 distillate fuel oil usage (gal/yr) by the heat content of the oil (Btu/gal) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for VOC in number 2 distillate fuel oil combustion (0.004 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

i. Emission Limitation(s):

Sulfur dioxide (SO₂) emissions shall not exceed 0.0006 lb/mmBtu of actual heat input when firing natural gas and 0.052 lb/mmBtu of actual heat input when firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

When firing fuel oil, compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by documenting that the sulfur content of each shipment of oil received during a calendar month meets the limitation.



When firing natural gas, compliance with this limitation will be assumed due to the negligible percent sulfur, by weight, in the fuel.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6, while firing number 2 distillate fuel oil.

[Authority for term: OAC rule 3745-77-07(C)(1)]

j. Emission Limitation(s):

Sulfur dioxide (SO₂) emissions shall not exceed 22.82 tons/year when firing natural gas and/or number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance shall be demonstrated by summing the annual natural gas and number 2 distillate fuel oil emissions.

The annual natural gas emissions shall be determined by multiplying annual natural gas usage (cu ft/yr) by the heat content of the gas (Btu/cu ft) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for SO₂ in natural gas combustion (0.0006 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

The annual number 2 distillate fuel oil emissions shall be determined by multiplying annual number 2 distillate fuel oil usage (gal/yr) by the heat content of the oil (Btu/gal) by the emission factor supplied by the boiler manufacturer (Nebraska Boiler Company, 08/28/2002) for SO₂ in number 2 distillate fuel oil combustion (0.052 lb/mmBtu) and dividing by 1,000,000 BTU/mmBtu and again by 2,000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1)]

k. Emission Limitation(s):

Visible particulate emissions (PE) shall not exceed 20% opacity, as a 6-minute average when firing natural gas, except as provided by rule.

Applicable Compliance Method(s):

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

[Authority for term: OAC rule 3745-77-07(C)(1)]



I. Emission Limitation(s):

Visible particulate emissions (PE) shall not exceed 20% opacity, as a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity when firing number 2 distillate fuel oil.

Applicable Compliance Method(s):

Compliance may be determined by data collected and recorded for the COM and, if required, by visible emissions observations.

[Authority for term: OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.