

Synthetic Minor Determination and/or Netting Determination

Permit To Install: **01-12238**

A. Source Description

Rolls-Royce Energy Systems is planning on expanding the turbine test facility located in Mt. Vernon, Ohio (Knox County). This expansion will increase the number of turbine test stands from the existing four to eleven total test stands. The facility will be testing three model types of combustion turbines at the facility: RB-211, Avon and Trent. Currently the turbine test stands are permitted under a synthetic minor PTI (01-08795), which limits fuel usage among the four test stands to 225,000,000 cubic feet of natural gas as a rolling, 12-month summation and 50,000 gallons of distillate fuel as a rolling 12-month summation. These fuel usage restrictions limit facility-wide emissions below major source thresholds in this non-attainment area. The current PTI application also includes fuel usage restrictions in order to maintain the facility's synthetic minor status.

B. Facility Emissions and Attainment Status

Knox County is currently non-attainment for ozone. The facility consists of turbine test stands and some metal surface coating activities (painting). The facility is currently a synthetic minor based on the current fuel usage restrictions and coating usage limitations for the painting operations. The painting operations are not being modified. The facility is not a major source for HAP or HAPS.

C. Source Emissions

Emissions from the test stands located at the facility are typical products of combustion for turbines. The emissions are primarily NO_x and CO, with some SO₂, VOC and PM. Individual and combined HAP emissions are negligible (less than 500 lb/year of HAPs) but will be included to ensure that the facility remains under the major source threshold for HAP emissions.

Emissions from the test stands pre- and post- synthetic minor restrictions are displayed in the table below:

Pollutant	Potential Emissions	Actual Emissions	Difference
	TPY	TPY	TPY
NO _x	3662.2	95.7	-3566.5
CO	1117.4	66.1	-1051.3
SO ₂	535.1	1.0	-534.1
VOC	4.2	0.2	-3.9
PM	66.3	1.7	-64.6

D. Conclusion

Emissions from the facility will be restricted based on fuel usage and avoid major source applicability.



State of Ohio Environmental Protection Agency

**RE: DRAFT PERMIT TO INSTALL
KNOX COUNTY**

CERTIFIED MAIL

Street Address:

Mailing Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Lazarus Gov.
Center

Application No: 01-12238

Fac ID: 0142010079

DATE: 4/24/2008

Rolls Royce Energy Systems Inc
Louis Burcsak
105 N Sandusky St
Mount Vernon, OH 43050

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43216-1049.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$21375** will be due. Please do not submit any payment now.

The Ohio EPA is urging 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 Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

CDO

KNOX COUNTY

PUBLIC NOTICE

ISSUANCE OF DRAFT PERMIT TO INSTALL **01-12238** FOR AN AIR CONTAMINANT SOURCE
FOR **Rolls Royce Energy Systems Inc**

On 4/24/2008 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **Rolls Royce Energy Systems Inc**, located at **105 N Sandusky St, Mt Vernon**, Ohio.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 01-12238:

4 Bay and 3 Bay test buildings with test stands for operational testing of turbine, compressor, and generator assemblies.

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

Isaac Robinson, Ohio EPA, Central District Office, 122 South Front St, P.O. Box 1049, Columbus, OH 43216-1049 [(614)728-3778]



**Permit To Install
Terms and Conditions**

**Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 01-12238

Application Number: 01-12238
Facility ID: 0142010079
Permit Fee: **To be entered upon final issuance**
Name of Facility: Rolls Royce Energy Systems Inc
Person to Contact: Louis Burcsak
Address: 105 N Sandusky St
Mount Vernon, OH 43050

Location of proposed air contaminant source(s) [emissions unit(s)]:

**105 N Sandusky St
Mt Vernon, Ohio**

Description of proposed emissions unit(s):

4 Bay and 3 Bay test buildings with test stands for operational testing of turbine, compressor, and generator assemblies.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described 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

Chris Korleski
Director

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- 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 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 appropriate Ohio EPA District Office or local air agency. 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.)

3. Records Retention Requirements

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.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections,

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PTI Application: 01-12238

Issued: To be entered upon final issuance

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conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. 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, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

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 of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of 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 emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. 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.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. 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.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental

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Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. 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 the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install 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.

10. 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.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available

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Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. 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 this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
NOx	95.7
CO	66.1
SO ₂	1.0
VOC	0.2
PM	1.7

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(P001) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (stack 115-S-01)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

Emissions Unit ID: **P001**

<p>OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

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40 Code of Federal Regulations Part 60, Subpart GG	See II.A.2.d, II.A.2.e, II.A.2.f and II.A.2.g below.
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2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

Emissions Unit ID: P001

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

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$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals 0.004 + [0.0067 * (N - 0.1)].

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source

Emissions Unit ID: **P001**

Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.

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

- a. Alternative 1:

For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

- b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as

Emissions Unit ID: **P001**

approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:
 - a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
 - a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
 - a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to

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the storage tank from any other source; or

- b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.
6. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
- a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of

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the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:

- a. the type of distillate received;
- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

5. Within 60 days after achieving the maximum production rate at which any stationary

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gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

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and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049
Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

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If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

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If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
 - ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

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- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb

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VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- I. Emissions limitation: Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

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where

ER = the emissions rate in pounds of SO₂ per MMBTU;

H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

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- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

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Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

1. The terms and conditions contained in this permit for this emissions unit shall supersede all the air pollution control requirements for the emissions unit contained in the permit to install 01-08795 issued on September 21, 2004.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment - (P004) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (stack 87-S-09)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

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OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

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where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

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STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

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B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

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For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

- 3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

- 4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

- 5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

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Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

1. The terms and conditions contained in this permit for this emissions unit shall supersede all the air pollution control requirements for the emissions unit contained in the permit to install 01-08795 issued on September 21, 2004.

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(P019) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (stack 87-S-06)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

Emissions Unit ID: **P019**

<p>OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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Emissions Unit ID: **P019**

<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a

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dry basis)

- Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.
- F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

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For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

Emissions Unit ID: P019

Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
 - ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.

- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
 - i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

- 1. The terms and conditions contained in this permit for this emissions unit shall supersede all the air pollution control requirements for the emissions unit contained in the permit to install 01-08795 issued on September 21, 2004.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment - (P020) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (stack 87-S-07)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

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OAC rule 3745-31-05(C)
[Synthetic Minor to avoid Title
V and Nonattainment New
Source Review]

Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

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where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

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STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

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B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

- 3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

- 4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

- 5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

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Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

Emissions Unit ID: P020

when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

Emissions Unit ID: P020

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.

- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

1. The terms and conditions contained in this permit for this emissions unit shall supersede all the air pollution control requirements for the emissions unit contained in the permit to install 01-08795 issued on September 21, 2004.

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(P023) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (stack 87-S-09)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

Emissions Unit ID: **P023**

<p>OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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Emissions Unit ID: **P023**

<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

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- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a

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dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

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For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

Emissions Unit ID: P023

Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
 - ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.

- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
 - i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

- 1. The terms and conditions contained in this permit for this emissions unit shall supersede all the air pollution control requirements for the emissions unit contained in the permit to install 01-08795 issued on September 21, 2004.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(P024) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (148-1)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

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OAC rule 3745-31-05(C)
[Synthetic Minor to avoid Title
V and Nonattainment New
Source Review]

Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

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where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

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STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

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B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

- 3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

- 4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

- 5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

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Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

None

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment - (P025) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (148-2)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

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<p>OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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Emissions Unit ID: **P025**

<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

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- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a

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dry basis)

- Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.
- F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

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For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

Emissions Unit ID: P025

Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

Emissions Unit ID: **P025**

P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
 - ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

Emissions Unit ID: **P025**

P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.

- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

Emissions Unit ID: P025

Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
 - i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(P026) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (148-3)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

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OAC rule 3745-31-05(C)
[Synthetic Minor to avoid Title
V and Nonattainment New
Source Review]

Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

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where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

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STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

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B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

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For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

- 3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

- 4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

- 5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

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Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

None

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(P027) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (148-4)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

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<p>OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

where

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STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a

dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

2.f Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:

- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
- ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

2.g The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

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B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

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Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.

- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

None

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(P029) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (149-1)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

Emissions Unit ID: **P029**

<p>OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

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2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

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STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

Rolls Royce Energy Systems Inc
DTI Application: 01 12228

Facility ID: 0142010079

Emissions Unit ID: P029

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B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

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For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

Emissions Unit ID: **P029**

- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

Emissions Unit ID: P029

Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

Emissions Unit ID: **P029**

P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
 - ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

Emissions Unit ID: **P029**

P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.

- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

Emissions Unit ID: P029

Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**A. Applicable Emissions Limitations and/or Control Requirements**

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

Operations, Property, and/or Equipment - (P030) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (149-2)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

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<p>OAC rule 3745-31-05(C) [Synthetic Minor to avoid Title V and Nonattainment New Source Review]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.</p> <p>Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.</p> <p>Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.</p>
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<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

2. Additional Terms and Conditions

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

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where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

Emissions Unit ID: P030

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

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B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

- 3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

- 4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

- 5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

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Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

None

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment - (P031) - Turbine/Compressor Test Stand firing natural gas or petroleum distillate (149-3)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.</p> <p>Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.</p> <p>Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr when firing natural gas and 122 lb/hr when firing petroleum distillate.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate.</p> <p>Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.</p> <p>See II.A.2.a below.</p>

Emissions Unit ID: **P031**

OAC rule 3745-31-05(C)
[Synthetic Minor to avoid Title
V and Nonattainment New
Source Review]

Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Emissions Unit ID: **P031**

<p>OAC rule 3745-31-05(C) [Voluntary Restriction to avoid BAT]</p>	<p>Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.</p> <p>Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>Emissions of PM from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.</p> <p>See II.A.2.b below.</p>
<p>OAC rule 3745-21-07(G)</p>	<p>The emissions limitation from this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
<p>OAC rule 3745-18-06</p>	<p>SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.</p> <p>See II.A.2.c below.</p>
<p>OAC rule 3745-17-11(B)(4)</p>	<p>Particulate emissions shall not exceed 0.040 lb/MMBtu from any stationary gas turbine.</p>
<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.</p>

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

- 2.a** The hourly emissions limitations in term II.A.1 (above) were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this short term emissions limitation.
- 2.b** Permit to Install 01-12238 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
- i. Annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet as a rolling, 12-month summation.
 - ii. Annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet as a rolling, 12-month summation.
 - iii. Annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons as a rolling, 12-month summation.
- 2.c** Stationary gas turbines are exempt from the OAC rule 3745-16-08(F) SO₂ limitation when firing natural gas.
- 2.d** Any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0075 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a dry basis)

Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.e** Any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBTU per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBTU per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit:

NO_x emissions shall not exceed the value calculated as follows:

$$\text{STD} = [0.0150 * (14.4 / Y)] + F$$

where

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and a

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dry basis)

- Y = manufacture's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the unit. The value of Y shall not exceed 14.4 kilojoules per watt hour.
- F = NO_x emission allowance for fuel-bound nitrogen (NO_x percent by volume) as defined according to N, the fuel-bound nitrogen content of the fuel (percent by weight), as follows:

If N (fuel-bound nitrogen content of the fuel) is equal to or less than 0.015% by weight, then F (NO_x percent by volume) equals 0.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.015% by weight and less than or equal to 0.1% by weight, then F (NO_x percent by volume) equals 0.4(N).

If N (fuel-bound nitrogen content of the fuel) is greater than 0.1% by weight and less than or equal to 0.25% by weight, then F (NO_x percent by volume) equals $0.004 + [0.0067 * (N - 0.1)]$.

If N (fuel-bound nitrogen content of the fuel) is greater than 0.25% by weight, then F (NO_x percent by volume) equals 0.005.

- 2.f** Any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- 2.g** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

B. Operational Restrictions

1. This emissions unit shall only be fired using natural gas or petroleum distillate.
2. The quality of petroleum distillate burned in this emissions unit shall meet the following specifications on an "as received" basis:
 - a. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds of sulfur dioxide per MMBtu of actual heat input, unless a lower limit is required per 40 CFR 60, Subpart GG; and
 - b. greater than 130,000 Btu per gallon of petroleum distillate.
3. The maximum annual natural gas usage for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 220,000,000 cubic feet, based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
4. The maximum annual natural gas usage for testing Trent WLE units in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 5,000,000 cubic feet based upon a rolling, 12-month summation of natural gas usage. The permittee has existing natural gas usage records and therefore does not need to be limited the first year on a monthly basis.
5. The maximum annual petroleum distillate usage in emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 50,000 gallons based upon a rolling, 12-month summation of petroleum distillate usage. The permittee has existing petroleum distillate usage records and therefore does not need to be limited the first year on a monthly basis.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate, in accordance with manufacturer's specifications, instrumentation sufficient to monitor, track and record all fuel usage for each turbine unit tested at this emissions unit during all periods of operation.
2. The permittee shall maintain records of the petroleum distillate burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

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For each shipment of petroleum distillate received for burning in this emissions unit, the permittee shall collect or require the petroleum distillate supplier to collect a representative grab sample of petroleum distillate and maintain records of the total quantity of petroleum distillate received, the permittee's or petroleum distillate 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 petroleum distillate for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of petroleum distillate that is burned in this emissions unit for each day when the emissions unit is in operation. If additional petroleum distillate 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 petroleum distillate burned in this emissions unit. A representative grab sample of petroleum distillate 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 petroleum distillate 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).

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 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the director.

3. The permittee shall maintain a record of each turbine tested at this emissions unit. This record shall include the following information:

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- a. the company name and identification of each turbine;
 - b. the turbine size based on the heat input needed at maximum load, in MMBtu per hour or gigajoules per hour;
 - c. the type and manufacturer of the turbine; and
 - d. the date each turbine was installed and removed from this emissions unit.
4. The permittee shall maintain records for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 which include the following:
- a. the total monthly amount of each fuel burned (natural gas and/or petroleum distillate) in all turbines at each emissions unit during the month, in cubic feet per month (for natural gas) or gallons per month (for petroleum distillate);
 - b. the rolling 12-month summation of the amount of each fuel type used (natural gas, and/or petroleum distillate), in cubic feet per rolling 12-month period (for natural gas) or gallons per rolling 12-month period (for petroleum distillate);
 - c. the total monthly emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit during the month, in pounds of pollutant per month; and
 - d. the rolling 12-month summation of emissions of each pollutant (NO_x, CO, VOC, SO₂ and particulate matter) emitted from each emissions unit, in tons of pollutant per rolling 12-month period.
5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after the initial startup of any stationary gas turbine installed at this emissions unit, the facility shall monitor the sulfur content and nitrogen content of the fuel being fired, as required by 40 CFR 60, Subpart GG, as follows:
- a. if the turbine is supplied its fuel from a bulk storage tank, the values (sulfur and nitrogen content) shall be determined on each occasion that fuel is transferred to the storage tank from any other source; or
 - b. if the turbine is supplied its fuel without intermediate bulk storage the values (sulfur and nitrogen content) shall be determined and recorded daily, or on a custom schedule approved by the Administrator.

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

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

D. Reporting Requirements

1. The permittee shall notify the Director (the appropriate District Office or local air agency) in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from Section II.C.4.d above. The notification shall include a copy of such record and shall be sent to the Director (the appropriate District Office or local air agency) within 45 days after the deviation occurs.
2. If any petroleum distillate (jet fuel, kerosene, and/or other petroleum distillate) is used as fuel in this emissions unit, the permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analysis for each shipment of oil which is received. The following information shall be included for each shipment:
 - a. the type of distillate received;

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- b. the total quantity received (in gallons);
- c. the permittee's or oil supplier's analysis for sulfur content (in percent); and
- d. the permittee's or oil supplier's analysis for heat content (in BTU per gallon).

These quarterly reports shall be submitted to the Ohio EPA Central District Office by January 31, April 30, July 30 and October 31 of each year and shall cover the oil shipments received during the previous calendar quarters. If petroleum distillates were not used during the quarter, the permittee shall submit a report which states that no petroleum distillates were not used.

3. The permittee shall submit deviation (excursion) reports that identify all exceedances of:
 - a. all exceedances of the rolling, 12-month natural gas usage limitations for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031; and
 - b. all exceedances of the rolling, 12-month petroleum distillate usage limitation for emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031.

These reports are due by the date described in Part 1 - General Terms and Conditions of this permit.

4. The permittee shall submit annual reports which specify:
 - a. the total emissions from this emissions unit for the previous calendar year; and
 - b. fuel usage from this emissions unit for the previous calendar year.

The annual fuel usage and emissions report shall be submitted to the Ohio EPA Central District Office by April 15th of each year.

5. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit quarterly reports, as required by 40 CFR 60, Subpart GG, to the Ohio EPA Central District Office. The following information shall also be included in this report:

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- a. any period of time during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during any performance test; and
- b. any period of time during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent by weight or emissions of sulfur dioxide exceed 0.015 percent by volume at 15 percent oxygen on a dry basis.

These quarterly emissions reports (only required if a turbine is in operation 60 days from the first test day) shall include the average fuel consumption, ambient conditions, gas turbine load, the sulfur and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures used to compute the emissions, and shall be postmarked by the 30th day following the end of each calendar quarter.

6. Within 60 days after achieving the maximum production rate at which any stationary gas turbine installed at this emissions unit will be operated, but not later than 180 days after initial startup of any turbine installed at the emissions unit, the permittee shall submit the following reports 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 shall include reference to the company identification of the turbine, the unit or serial number, and are to be sent to:

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

and

Ohio Environmental Protection Agency
Central District Office
P.O. Box 1049

Emissions Unit ID: P031

Columbus, Ohio 43216-1049

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emissions limitation: Emissions of nitrogen oxides (NO_x) shall not exceed 579 lb/hr when firing natural gas and 836 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (1.2763 lb NO_x/MMBtu) or petroleum distillate combustion (1.83359 lb NO_x/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 7 or 7E.

- b. Emissions limitation: Emissions of carbon monoxide (CO) shall not exceed 255 lb/hr when firing natural gas and 89.5 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.55946 lb CO/MMBtu) or petroleum distillate combustion (0.1962 lb CO/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 10.

- c. Emissions limitation: Emissions of sulfur dioxide (SO₂) shall not exceed 0.3 lb/hr

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when firing natural gas and 122 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0007 lb SO₂/MMBtu) or petroleum distillate combustion (0.2679 lb SO₂/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 6 or 6C.

- d. Emissions limitation: Emissions of volatile organic compounds (VOC) shall not exceed 1.0 lb/hr when firing natural gas and 0.2 lb/hr when firing petroleum distillate

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0021 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) or petroleum distillate combustion (0.00041 lb VOC/MMBtu, AP-42 Table 3.1-2a (April 2000)) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 25 or 25A (as appropriate).

- e. Emissions limitation: Emissions of particulate matter (PM) shall not exceed 6.3 lb/hr when firing natural gas and 15.1 lb/hr when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with this hourly limitation by multiplying the emissions factor provided by the facility for natural gas combustion for testing wet low-emissions (WLE) operations (0.0139 lb PM/MMBtu) or petroleum distillate combustion (0.0332 lb pm/MMBtu) by the maximum hourly fuel usage rate (456 MMBtu/hr).

If required, the facility shall demonstrate compliance with these hourly emissions limitations through emissions test performed in accordance with 40 CFR Part 60 Appendix A, Methods 1-4 and 5 or 5I (as appropriate)

- f. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 89.5 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.7538 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
 - ii. multiply the emissions factor of 1.2763 lb NO_x/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- g. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 66.1 tons as a rolling, 12-month summation when firing natural gas.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.55946 lb CO/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- h. Emissions limitation: Emissions of NO_x from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 6.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 1.8336 lb NO_x/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- i. Emissions limitation: Emissions of CO from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.7 tons per year when firing petroleum distillate.

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Applicable compliance method: The permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.1962 lb CO/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- j. Emissions limitation: Emissions of SO₂ from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing natural gas and 0.9 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0007 lb SO₂/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.2679 lb SO₂/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- k. Emissions limitation: Emissions of VOC from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing natural gas and 0.001 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0021 lb VOC/MMBtu by the total 12-month natural gas usage in cubic feet and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.00041 lb VOC/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- l. Emissions limitation: Emissions of PM from emissions units P001, P004, P019,

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P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 1.6 tons as a rolling, 12-month summation when firing natural gas and 0.1 tons as a rolling, 12-month summation when firing petroleum distillate.

Applicable compliance method: For natural gas, The permittee shall demonstrate compliance with the rolling 12-month emission limit by the sum of the two following calculations:

- i. multiply the emissions factor of 0.0066 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet (excepting natural gas utilized for WLE testing) and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.
- ii. multiply the emissions factor of 0.0139 lb PM/MMBtu by the total 12-month natural gas usage in cubic feet utilized for WLE testing, and the heat content of the fuel (1040 Btu/scf), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

For petroleum distillates, the permittee shall demonstrate compliance with the rolling 12-month emission limit by multiplying the emissions factor of 0.0332 lb PM/MMBtu by the total 12-month petroleum distillate usage in gallons and the heat content of the fuel (134,000 Btu/gallon), and then dividing by 1,000,000 Btu / MMBtu and 2000 lb/ ton.

- m. Emissions limitation: SO₂ emissions shall not exceed 0.5 lb/MMBtu when firing petroleum distillate.

Applicable compliance method: Compliance shall be demonstrated by testing the sulfur content and heat content of each shipment of petroleum distillates received and maintaining records of these testing results of the oil supplier's analysis, as per Section II.C.2 of these terms and conditions.

The SO₂ emission rate from jet fuel, kerosene or other petroleum distillate shall be calculated per OAC rule 3745-18-04(F)(2) as follows:

$$ER = (1,000,000 / H) * D * S * 1.974$$

where

ER = the emissions rate in pounds of SO₂ per MMBTU;

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H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

- n. Emission limitation: Emissions of any single hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.1 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00071 pound single HAP per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- ii. for petroleum distillate, multiply the emission factor of 0.00079 pound single HAP per MMBtu (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
- iii. the sum of II.E.1.n.i and II.E.1.n.ii (above) is the total HAP emissions as a rolling, 12-month summation.

- o. Emission limitation: Emissions of total combined hazardous air pollutant (HAP) from emissions units P001, P004, P019, P020, P023, P024, P025, P026, P027, P029, P030 and P031 shall not exceed 0.2 tons as a rolling, 12-month summation when firing any fuel.

Applicable compliance method: Compliance with the rolling 12-month emission limit shall be demonstrated using the following calculations:

- i. for natural gas, multiply the emission factor of 0.00103 pound total combined HAPs per MMBtu (AP-42, Table 3.1-3, April 2000) by the heat content of the fuel (1040 Btu per cubic foot) and by the total 12-month fuel usage in cubic feet per 12-months and dividing by 1,000,000 MMBTU per

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Btu and by 2000 tons per pound.

- ii. for petroleum distillate, multiply the emission factor of 0.0013 pound total combined HAPs per MMBTU (AP-42, Tables 3.1-4 and 3.1-5, April 2000) by the total 12-month fuel usage in gallons per 12-months and by the maximum heat content of the fuel (134,000 Btu per gallon) and dividing by 1,000,000 MMBTU per Btu and by 2000 tons per pound.
 - iii. the sum of II.E.1.m.i and II.E.1.m.ii (above) is the total HAP emissions as a rolling, 12-month summation.
- p. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load greater than 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.d of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- q. Emission Limitation: For any stationary gas turbine used at this test stand with a heat input of at peak load equal to or greater than 10 MMBtu per hour (10.7 gigajoules per hour) but less than or equal to 100 MMBtu per hour (107.2 gigajoules per hour) based on the lower heating value of the fuel fired and which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall meet the following emissions limit within this 60 days and not later than 180 days after initial startup of the unit, NO_x emissions shall not exceed the value as calculated in section II.A.2.e of this permit.

Applicable Compliance Method: Compliance shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60,

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Appendix A, Method 20 (when firing natural gas) or Method 7 (when firing petroleum distillate).

- r. Emissions Limitations: For any stationary gas turbine used at this test stand which remains on site 60 days after achieving the maximum production rate at which the unit will be operated shall comply with one or the other of the following requirements within this 60 days and not later than 180 days after initial startup of the unit:
- i. SO₂ emissions shall not exceed 0.015 percent by volume at 15 percent oxygen on a dry basis; or
 - ii. this emissions unit shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.

Applicable Compliance Methods: Compliance with the SO₂ emissions limit shall be demonstrated through emissions testing, which shall be required within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit installed at this test stand. The emissions testing shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20 (when firing natural gas) or Method 6 (when firing jet fuel, kerosene or other petroleum distillate).

Compliance with the sulfur fuel content limit shall be demonstrated with the monitoring and record keeping requirements in terms II.C.2 of these terms and conditions.

F. Miscellaneous Requirements

None