

**Synthetic Minor Determination and/or  Netting Determination**

Permit To Install: 04-01493

**A. Source Description**

The 180th Fighter Wings operates a sound-suppression engine test cell at the Ohio Air National Guard facilities located at the Toledo Express Airport. The engine test cell is used to ground test aircraft engines following periodic maintenance and prior to flight. The specific test sequence and length of test is specified by the US Air Force technical orders and operating instructions. The two hour test consists of the engine running idle power, then at intermediate power, then at military thrust, and finally at full afterburner. When the original PTI was established, it was based on the F100-PW200 jet engine. The permittee is currently in the process of converting to the F100-PW229 engine, and therefore the emissions factors have changed. The emission factors were supplied by the permittee and the source was "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002". In order to limit the emissions below a major source, the permittee has agreed to limit the emission unit to 116 hours at idle power, 40 hours at intermediate power, 20 hours at military thrust, and 16 hours at full afterburner based on a rolling, 12-month summation of operating hours. This will result in a permit allowable of 192 hours of operation per year for the engine test cell.

**B. Facility Emissions and Attainment Status**

The facility is a minor source for VOC, PM10 & SO2 and a synthetic minor source for CO & NOx emissions due to a restriction on operating hour.

<u>Pollutant</u>	<u>Significant Net Emission Increase Levels</u>	<u>Attainment Status</u>
PM10	25 TPY	unclassifiable
SO2	40 TPY	attainment
VOC	40 TPY	attainment
NOx	40 TPY	unclassifiable/attainment
CO	100 TPY	unclassifiable/attainment

**C. Source Emissions**

	<u>PTE (ton/yr)</u>	<u>Permit allowable (ton/yr)</u>
CO	154.66	13.5
VOC	32.04	2.8
NOx	185.64	16.3
PM10	7.27	0.6
SO2	7.88	0.7

PTE is based on one full engine test per eight hour work shift, which permittee reports maximum possible due to constraints of equipment and turn around time to mount the test engine. This results in 1,095 engine tests per year. The permit allowable is based on 8 full engine tests per month, 96 engine tests per year, or 116 hours at idle power, 40 hours at approach power, 20 hours at military power and 16 hours at afterburner power.

**D. Conclusion**

The permittee has taken a restriction on operating hours in order to avoid major source status.

**Fees**

PWR(1001-5,000 lbs/hr) \$500  
Based on average fuel use of 4233.7 lbs/hr



State of Ohio Environmental Protection Agency

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

**CERTIFIED MAIL**

Street Address:

Mailing Address:

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

Lazarus Gov.  
Center

**Application No:** 04-01493

**Fac ID:** 0448002072

**DATE:** 4/1/2008

Ohio National Guard, 180th Fighter Wing  
William L. Antoszewski  
2660 South Eber Road  
Swanton, OH 43558-8752

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 **\$500** 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

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**LUCAS COUNTY**

PUBLIC NOTICE  
ISSUANCE OF DRAFT PERMIT TO INSTALL **04-01493** FOR AN AIR CONTAMINANT SOURCE  
FOR **Ohio National Guard, 180th Fighter Wing**

On 4/1/2008 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **Ohio National Guard, 180th Fighter Wing**, located at **2660 South Eber Road, Swanton, Ohio**.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 04-01493:

**Modification of Engine Test Facility to incorporate new emission factors for updated F-100-PW-220 engine.**

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.

Karen Granata, Toledo Department of Environmental Services, 348 South Erie Street, Toledo, OH 43604 [(419)936-3015]



**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 04-01493**

Application Number: 04-01493  
Facility ID: 0448002072  
Permit Fee: **To be entered upon final issuance**  
Name of Facility: Ohio National Guard, 180th Fighter Wing  
Person to Contact: William L. Antoszewski  
Address: 2660 South Eber Road  
Swanton, OH 43558-8752

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**2660 South Eber Road  
Swanton, Ohio**

Description of proposed emissions unit(s):  
**Modification of Engine Test Facility to incorporate new emission factors for updated F-100-PW-220 engine.**

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

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Chris Korleski  
Director

Ohio National Guard, 180th Fighter Wing  
PTI Application: 04-01493  
Issued: To be entered upon final issuance  
Part I - GENERAL TERMS AND CONDITIONS

Facility ID: 0448002072

## **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,

Ohio National Guard, 180th Fighter Wing

Facility ID: 0448002072

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Issued: To be entered upon final issuance

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

Ohio National Guard, 180th Fighter Wing

Facility ID: 0448002072

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

Ohio National Guard, 180th Fighter Wing

Facility ID: 0448002072

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**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>
CO	13.5(+1.2)
NOx	16.3(-8.5)
VOC	2.8(+2.52)
PM10	0.6 (-0.1)
SO2	0.7(-2.7)

Emissions Unit ID: P001

**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 - (P001) - Modification of Jet Engine Test Facility**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) (Synthetic Minor to avoid Title V)	Carbon Monoxide (CO) emissions shall not exceed 13.5 tons per rolling, 12-month period.  Nitrogen Oxides (NOx) emissions shall not exceed 16.3 tons per rolling, 12-month period.  See Section A.2.b. and Section B.1.
OAC rule 3745-31-05(A)(3)(b)	Volatile Organic Compound (VOC) emissions shall not exceed 2.8 tons per rolling, 12-month period.  Particulate matter emissions less than 10 microns in diameter (PM10) shall not exceed 0.6 ton per rolling, 12-month period.  Sulfur dioxide (SO2) emissions shall not exceed 0.7 ton per rolling, 12-month period.  See Section A.2.a and Section B.1.
OAC rule 3745-31-05(A)(3)	CO emissions shall not exceed 1593.16 pounds per hour.  NOx emissions shall not exceed 1058.78 pounds per hour.
OAC rule 3745-17-11(B)	See Section A.2.c.
OAC rule 3745-17-07(A)	See Section A.2.d.
OAC rule 3745-18-06(E)	See Section A.2.e.
OAC rule 3745-21-08(B)	See Section A.2.f.

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

- 2.a** Permit to Install 04-01493 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. To limit the operating hours of the jet engine test stand to 48 hours at the idle power setting, 64 hours at the approach power setting, 64 hours at the military power setting, and 16 hours at the afterburner power setting based on a rolling, 12-month summation of operating hours per power setting. These power setting as defined in the permit to install application and whose source is "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002".
- 2.b** Compliance with OAC rule 3745-31-05(C) shall be demonstrated by compliance with the restriction on operating hours.
- 2.c** The uncontrolled mass rate of particulate emissions (PE)\* from this emissions unit is less than 10 pounds/hour. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11 does not apply because the process weight rate is equal to zero. "Process weight" as defined in OAC rule 3745-17-01(B)(14) excludes liquid fuels when they are used solely as fuels as well as air introduced for the purpose of combustion.
- \* The burning of jet fuel is the only source of PE from this emissions unit.
- 2.d** The emissions unit is exempt from the visible PE limitations specified in OAC rule 3745-17-07(A), pursuant to OAC rule 3745-17-07(A)(3)(h), because the emissions unit is not subject to the requirements of OAC rule 3745-17-11.
- 2.e** The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of liquid jet fuels. Liquid fuels are specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emissions limitation.
- 2.f** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply

Emissions Unit ID: P001

with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this Permit to Install.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U. S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exist as part of the federally-approved SIP for Ohio.

## B. Operational Restrictions

- The maximum annual operating hours for this emissions unit shall not exceed 116 hours at the idle power setting, 40 hours at the approach power setting, 20 hours at the military power setting, and 16 hours at the afterburner power setting, based upon a rolling, 12-month summation of the operating hours for each power setting.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the operating hours levels specified in the following table:

Maximum allowable cumulative operating hours at each power setting

<u>Month(s)</u>	<u>Idle</u>	<u>Approach</u>	<u>Military</u>	<u>Afterburner</u>
1	10	3.5	1.8	1.5
1-2	20	7.0	3.6	3.0
1-3	30	10.5	5.4	4.5
1-4	40	14.0	7.2	6.0
1-5	50	17.5	9.0	7.5
1-6	60	21.0	10.8	9.0
1-7	70	24.5	12.6	10.5
1-8	80	28.0	14.4	12.0
1-9	90	31.5	16.2	13.5
1-10	100	35.0	18.0	15.0
1-11	110	38.5	19.8	16.0
1-12	116	40.0	20.0	16.0

After the first 12 calendar months of operation following the issuance of the permit, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

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**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall maintain monthly records of the following information:
  - a. the operating hours at each power setting for the jet engine test cell;
  - b. during the first 12 calendar months of the operation following issuance of this permit, the permittee shall record the cumulative operating hours at each power setting for each calendar month; and
  - c. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling 12-month summation of the operating hours at each power setting.

**D. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling 12-month operating hours limitations and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative operating hours levels.
3. If no deviations (excursions) have occurred, the permittee shall submit a quarterly report which states that no deviations (excursions) have occurred during the previous quarter.

**E. Testing Requirements**

1. Compliance with the emission limitation(s) in Section A.1. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:

CO emissions shall not exceed 1593.16 pounds per hour.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated by the worst case emission factor from "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002" as supplied by the permittee:

**Issued: To be entered upon final issuance**

Idle: 11.04 lb/hr  
Intermediate: 3.62 lb/hr  
Military: 7.58 lb/hr  
Afterburner: 1593.16 lb/hr

The jet engine afterburner power provides the worst case and therefore determines the short term emission limit for CO emissions.

If required, the permittee shall demonstrate compliance with this emissions limitation through emission testing performed in accordance with Methods 1 thru 4 and 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

b. Emission Limitation:

CO emissions shall not exceed 13.5 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated by multiplying the CO emission factors from "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002" at each power level (lb/hr) by the rolling, 12-month summation of operating hours at each power level (hours) (See Section C.1).

Idle: 11.04 lb/hr x 116 hrs = 1280.64 pounds  
Approach: 3.62 lb/hr x 40 hrs = 144.80 pounds  
Military: 7.58 lb/hr x 20 hrs = 151.60 pound  
Afterburner: 1593.16 lb/hr x 16 hrs = 25,490.56 pounds

Sum the emissions and divide by 2000 lbs/ton:

$(1280.64+144.80+151.60+25,490.56)/2000 = 13.5$  tons per rolling, 12-month.

c. Emission Limitation:

NOx emissions shall not exceed 1058.78 pounds per hour.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated by the worst case emission factor from "Air Emissions Inventory Guidance Document for Mobile Sources

Emissions Unit ID: **P001**

at Air Forces Installations, IERA 2002" as supplied by the permittee:

Idle: 4.13 lb/hr

Intermediate: 46.72 lb/hr

Military: 662.40 lb/hr

Afterburner: 1058.78 lb/hr

The jet engine afterburner power provides the worst case and therefore determines the short term emission limit for CO emissions.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 7E of 40 CFR Part 60 Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.

d. Emission Limitation:

NOx emissions shall not exceed 16.3 tons per rolling, 12-month period.

**Issued: To be entered upon final issuance**

Applicable Compliance Methods:

Compliance with this emission limitation may be demonstrated by multiplying the NO<sub>x</sub> emission factors from "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002" at each power level (lb/hr) by the rolling, 12-month summation of operating hours at each power level (hours) (See Section C.1).

Idle: 4.13 lb/hr x 116 hrs = 479.08 pounds

Approach: 46.72 lb/hr x 40 hrs = 1868.80 pounds

Military: 662.40 lb/hr x 20 hrs = 13,248.00 pound

Afterburner: 1058.78 lb/hr x 16 hrs = 16,940.48 pounds

Then sum the emissions and divide by 2000 lbs/ton:

$(479.08+1868.80+13,248.00+16,940.48)/2000 = 16.3$  tons per rolling, 12-month.

## e. Emission Limitation:

VOC emissions shall not exceed 2.8 tons per rolling, 12-month period.

Applicable Compliance Methods:

Compliance with this emission limitation may be demonstrated by multiplying the VOC emission factors from "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002" at each power level (lb/hr) by the rolling, 12-month summation of operating hours at each power level (hours) (See Section C.1).

Idle: 0.41 lb/hr x 116 hrs = 47.56 pounds

Approach: 0.65 lb/hr x 40 hrs = 26.00 pounds

Military: 6.20 lb/hr x 20 hrs = 124.00 pound

Afterburner: 338.09 lb/hr x 16 hrs = 5409.44 pounds

Then sum the emissions and divide by 2000 lbs/ton:

$(47.56+26.00+124.00+5409.44)/2000 = 2.8$  tons per rolling, 12-month.

## f. Emission Limitation:

PM<sub>10</sub> emissions shall not exceed 0.6 ton per rolling, 12-month period.

Applicable Compliance Methods:

**Issued: To be entered upon final issuance**

Compliance with this emission limitation may be demonstrated by multiplying the PM10 emission factor from "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002" at each power level (lb/hr) by the rolling, 12-month summation of operating hours at each power level (hours) (See Section C.1).

Idle:  $2.24 \text{ lb/hr} \times 116 \text{ hrs} = 259.84 \text{ pounds}$   
 Approach:  $8.15 \text{ lb/hr} \times 40 \text{ hrs} = 326.00 \text{ pounds}$   
 Military:  $15.28 \text{ lb/hr} \times 20 \text{ hrs} = 305.60 \text{ pound}$   
 Afterburner:  $23.91 \text{ lb/hr} \times 16 \text{ hrs} = 382.56 \text{ pounds}$

Then sum the emissions and divide by 2000 lbs/ton:

$(259.84+326.00+305.60+382.56)/2000 = 0.6 \text{ tons per rolling, 12-month.}$

## g. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed 0.7 tons per rolling, 12-month period.

Applicable Compliance Methods:

Compliance with this emission limitation may be demonstrated by multiplying the SO<sub>2</sub> emission factor from "Air Emissions Inventory Guidance Document for Mobile Sources at Air Forces Installations, IERA 2002" of 1.7 pounds SO<sub>2</sub> per 1000 pounds of feul by the feul flow rate (lbs feul/hr) (also defined in the same document) and then multiplying by the rolling, 12-month summation of operating hours at each power level (hours) (See Section C.1).

Idle:  $(1.7 \text{ lbs}/1000 \text{ lbs fuel})(1087 \text{ lbs fuel/hr})(116 \text{ hrs}) = 214.36 \text{ pounds}$   
 Approach:  $(1.7 \text{ lbs}/1000 \text{ lbs fuel})(3098 \text{ lbs fuel/hr})(40 \text{ hrs}) = 210.66 \text{ pounds}$   
 Military:  $(1.7 \text{ lbs}/1000 \text{ lbs fuel})(11490 \text{ lbs fuel/hr})(20 \text{ hrs}) = 390.66 \text{ pound}$   
 Afterburner:  $(1.7 \text{ lbs}/1000 \text{ lbs fuel})(20793 \text{ lbs fuel/hr})(16 \text{ hrs}) = 565.57 \text{ pounds}$

Then sum the emissions and divide by 2000 lbs/ton:

$(214.36+210.66+390.66+565.57)/2000 = 0.7 \text{ tons per rolling, 12-month.}$

**F. Miscellaneous Requirements**

1. The terms and conditions contained in this permit for emissions unit P001 shall supercede all requirements for emissions unit P001 contained in Permit to Install

**Ohio National Guard, 180th Fighter Wing**

**BTI Application: 04-01492**

**Facility ID: 0448002072**

**Emissions Unit ID: P001**

04-1049 (issued 11/19/1997).

2. The terms and conditions contained in this permit for emissions unit P001 are federally enforceable.

**Ohio National Guard, 180th Fighter Wing**  
**PTI Application: 04-01493**  
**Issued: To be entered upon final issuance**

**Facility ID: 0448002072**

Emissions Unit ID: **P001**

SIC CODE 4581 SCC CODE 20400111 EMISSIONS UNIT ID P001

EMISSIONS UNIT DESCRIPTION Modification of Jet Engine Test Facility

DATE INSTALLED

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter	N/A	N/A	N/A	N/A	N/A
PM <sub>10</sub>	Unclassified	N/A	0.3	N/A	0.6
Sulfur Dioxide	Attainment	N/A	0.4	N/A	0.7
Organic Compounds	Attainment	N/A	1.4	N/A	2.8
Nitrogen Oxides	Attainment	1058.78 lbs/hr	8.2	1058.78 lbs/hr	16.3
Carbon Monoxide	Attainment	1593.16 lbs/hr	6.8	1593.16 lbs/hr	13.5
Lead	Attainment	N/A	N/A	N/A	N/A
Other: Air Toxics	N/A	N/A	N/A	N/A	N/A

APPLICABLE FEDERAL RULES:

NSPS? **PPPP** NESHAP? No PSD? No OFFSET POLICY? No

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

**Enter Determination** Restriction on operating hours

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? No  
 OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

**TOXIC AIR CONTAMINANTS**

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED\*? \_\_\_\_\_ YES \_\_\_\_\_ NO

IDENTIFY THE AIR CONTAMINANTS: \_\_\_\_\_