



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: June 17, 2010

RE: Hanover College / 077-28878-00004

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot12/03/07



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New Source Construction and Minor Source Operating Permit OFFICE OF AIR QUALITY

**Hanover College
359 LaGrange Road
Hanover, Indiana 47243**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-5.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a MSOP under 326 IAC 2-6.1.

Operation Permit No.: M077-28878-00004	
Issued by:  Alfred C. Dumauval, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: June 17, 2010 Expiration Date: June 17, 2015

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Pollutants for Stationary Reciprocating Internal Combustion Engines**

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

The Permittee owns and operates stationary natural gas-fired combustion units at a college.

Source Address:	359 LaGrange Road, Hanover, Indiana 47243
General Source Phone Number:	(812) 866-7241
SIC Code:	8200
County Location:	Jefferson
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

(a) One hundred fifty-seven (157) natural gas-fired combustion units:

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Alpha Delta Pi	three (3) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2006 (both)
Administration Building	one (1) boiler	1.5	1994
Ayres Stadium	one (1) furnace	0.06	after 1983
	one (1) water heater	0.199	2006
	one (1) clothes dryer	0.292	after 1983
	two (2) gas unit heaters	0.1, each	1972 (both)
Beta/Coulter House	two (2) boilers	0.5; 0.3	2001 (both)
Blythe Hall	three (3) furnaces	0.12, each	after 1983
	one (1) water heater	0.199	2008
Brown Chapel	one (1) furnace	0.1	after 1983
Campus Center	two (2) boilers	2.52; 2.108	1982; 1980
	one (1) water heater	0.18	2007
Campus Center Kitchen	one (1) boiler	0.63	2007
	two (2) water heaters	0.36, each	2004; 2006

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Campus Security	one (1) boiler	0.09	1975
Center for Fine Arts	one (1) boiler	4.185	1975
	one (1) kiln	0.475	1974
Child Care	two (2) furnaces	0.1, each	after 1983
	one (1) water heater	0.04	2003
Chi Omega	two (2) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2001 (both)
Classic Hall	two (2) boilers	1.248; 0.164	2002 (both)
Crowe Hall	two (2) boilers	0.75, each	2008 (both)
	two (2) water heaters	0.199, each	2008 (both)
Donner Hall	one (1) boiler	3.392	2006
	one (1) boiler	2.836	1975
	one (1) water heater	0.72	1995
Duggan Library	two (2) boilers	3.78; 3.5	1975 (both)
File House	one (1) furnace	0.08	after 1983
Greenwood Suites	one (1) furnace	0.96	after 1983
	one (1) water heater	0.56	2003
Hendricks Hall	two (2) boilers	0.03, each	2008 (both)
Horner Center	two (2) boilers	3.55; 2.176	1995 (both)
	one (1) water heater	0.24	1995
	one (1) clothes dryer	0.146	2003
Jordan House	two (2) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2008 (both)
Kappa Alpha Theta	one (1) boiler	2.5426	1980
	one (1) furnace	0.105	after 1983
	one (1) water heater	0.72	1995
Katherine Parker	one (1) boiler	2.937	1981
	three (3) water heaters	0.156, each	2008 (2); 2009
Lamda Chi	three (3) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2010 (both)
Lynn Hall	one (1) boiler	4.185	1978
Ogle Center	two (2) water heaters	0.75, each	1999 (both)

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Phi Mu	three (3) furnaces	0.12 (2); 0.08	after 1983
	two (2) water heaters	0.199, each	2008 (both)
Presidents House	four (4) furnaces	0.125; 0.175 (2); 0.06	after 1983
Parker Auditorium	one (1) boiler	3.357	1947
Science Center	two (2) boilers	6.0, each	1999 (both)
	two (2) water heaters	0.72, each	1999 (both)
Science Hall	one (1) boiler	2.5	1986
	five (5) furnaces	0.06; 0.08; 0.1 (2); 0.12	after 1983
Wiley Hall	one (1) boiler	2.937	1963
	one (1) water heater	0.72	2005
44 Clemmons	one (1) furnace	0.12	after 1983
52 Clemmons	one (1) furnace	0.1	after 1983
	one (1) water heater	0.034	1996
60 Clemmons	one (1) furnace	0.1	after 1983
124 Clemmons	one (1) furnace	0.12	after 1983
134 Clemmons	one (1) furnace	0.08	after 1983
153 Clemmons	one (1) furnace	0.057	after 1983
	one (1) water heater	0.034	1994
163 Clemmons	one (1) furnace	0.1	after 1983
164 Clemmons	one (1) furnace	0.08	after 1983
175 Clemmons	one (1) furnace	0.12	after 1983
176 Clemmons	one (1) furnace	0.125	after 1983
	one (1) water heater	0.04	2000
215 Clemmons	one (1) furnace	0.11	after 1983
340 File Street	one (1) furnace	0.08	after 1983
347 File Street	one (1) furnace	0.1	after 1983
348 File Street	one (1) furnace	0.1	after 1983
360 File Street	one (1) furnace	0.1	after 1983
372 File Street	one (1) furnace	0.1	after 1983
129 Fisher Street	one (1) furnace	0.115	after 1983
	one (1) water heater	0.04	2003

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
105 Garritt Street	one (1) furnace	0.15	after 1983
	one (1) water heater	0.04	2006
106 Garritt Street	one (1) furnace	0.1	after 1983
107 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2003
120 Garritt Street	one (1) furnace	0.1	after 1983
132 Garritt Street	one (1) furnace	0.12	after 1983
133 Garritt Street	one (1) furnace	0.1	after 1983
144 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	1998
145 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.075, each	after 1983
146 Garritt Street	one (1) furnace	0.1	after 1983
156 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2002
157 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2007
167 Garritt Street	one (1) furnace	0.12	after 1983
203 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.075, each	after 1983
221 Garritt Street	one (1) furnace	0.08	after 1983
174 Greenwood Street	one (1) furnace	0.08	after 1983
Madison Avenue Apartments 1-3	three (3) furnaces	0.05, each	after 1983
	three (3) water heaters	0.04, each	1984 (2); 2006
318 Main Street	one (1) furnace	0.1	after 1983
333 Prospect Street	one (1) furnace	0.125	after 1983
335 Prospect Street	one (1) furnace	0.08	after 1983
85 Young Street	one (1) furnace	0.125	after 1983
	one (1) water heater	0.04	2000
87 Young Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2003
95 Young Street	one (1) furnace	0.08	after 1983
103 Young Street	one (1) furnace	0.08	after 1983

- (b) One (1) natural gas-fired emergency generator, located at the Science Center, constructed on November 16, 1999, with a maximum heat input capacity of 0.87 MMBtu/hr.

This unit is considered an existing affected source under 40 CFR 63, Subpart ZZZZ.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)][326 IAC 2-5.1-4]

This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 when the following requirements are met:

- (a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as described in the application or the permit. The emission units covered in this permit may continue operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as described.
- (b) If actual construction of the emission units differs from the construction described in the application, the source may not continue operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.
- (c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

B.4 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

- (a) This permit, M077-28878-00004, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.5 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

B.6 Enforceability

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.7 Severability

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.8 Property Rights or Exclusive Privilege

This permit does not convey any property rights of any sort or any exclusive privilege.

B.9 Duty to Provide Information

- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.10 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The Permittee shall implement the PMPs.

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to M077-28878-00004 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

B.13 Termination of Right to Operate [326 IAC 2-6.1-7(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least one hundred twenty (120) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

B.14 Permit Renewal [326 IAC 2-6.1-7]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:

- (1) Submitted at least one hundred twenty (120) days prior to the date of the expiration of this permit; and
- (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-6.1 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-6.1-4(b), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.15 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (c) The Permittee shall notify the OAQ no later than thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.16 Source Modification Requirement

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.17 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.18 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

B.19 Annual Fee Payment [326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees due no later than thirty (30) calendar days of receipt of a bill from IDEM, OAQ.
- (b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.20 Credible Evidence [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Open Burning [326 IAC 4-1][IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2][326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.6 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.7 Asbestos Abatement Projects [326 IAC 14-10][326 IAC 18][40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project.

- (e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

- (f) **Demolition and Renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Licensed Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-6.1-5(a)(2)]

C.8 Performance Testing [326 IAC 3-6]

- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date.
- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date.
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA.

Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]

C.10 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.11 Instrument Specifications [326 IAC 2-1.1-11]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps

C.12 Response to Excursions or Exceedances

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

- (a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to normal or usual manner of operation.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;
 - (2) review of operation and maintenance procedures and records; and/or
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall record the reasonable response steps taken.

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.
- (b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline

- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]

C.14 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.15 General Record Keeping Requirements [326 IAC 2-6.1-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.16 General Reporting Requirements [326 IAC 2-1.1-11][326 IAC 2-6.1-2][IC 13-14-1-13]

- (a) Reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or

certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

- (c) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One hundred fifty-seven (157) natural gas-fired combustion units:

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Alpha Delta Pi	three (3) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2006 (both)
Administration Building	one (1) boiler	1.5	1994
Ayres Stadium	one (1) furnace	0.06	after 1983
	one (1) water heater	0.199	2006
	one (1) clothes dryer	0.292	after 1983
	two (2) gas unit heaters	0.1, each	1972 (both)
Beta/Coulter House	two (2) boilers	0.5; 0.3	2001 (both)
Blythe Hall	three (3) furnaces	0.12, each	after 1983
	one (1) water heater	0.199	2008
Brown Chapel	one (1) furnace	0.1	after 1983
Campus Center	two (2) boilers	2.52; 2.108	1982; 1980
	one (1) water heater	0.18	2007
Campus Center Kitchen	one (1) boiler	0.63	2007
	two (2) water heaters	0.36, each	2004; 2006
Campus Security	one (1) boiler	0.09	1975
Center for Fine Arts	one (1) boiler	4.185	1975
	one (1) kiln	0.475	1974
Child Care	two (2) furnaces	0.1, each	after 1983
	one (1) water heater	0.04	2003
Chi Omega	two (2) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2001 (both)
Classic Hall	two (2) boilers	1.248; 0.164	2002 (both)
Crowe Hall	two (2) boilers	0.75, each	2008 (both)
	two (2) water heaters	0.199, each	2008 (both)
Donner Hall	one (1) boiler	3.392	2006
	one (1) boiler	2.836	1975
	one (1) water heater	0.72	1995
Duggan Library	two (2) boilers	3.78; 3.5	1975 (both)

File House	one (1) furnace	0.08	after 1983
Greenwood Suites	one (1) furnace	0.96	after 1983
	one (1) water heater	0.56	2003
Hendricks Hall	two (2) boilers	0.03, each	2008 (both)
Horner Center	two (2) boilers	3.55; 2.176	1995 (both)
	one (1) water heater	0.24	1995
	one (1) clothes dryer	0.146	2003
Jordan House	two (2) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2008 (both)
Kappa Alpha Theta	one (1) boiler	2.5426	1980
	one (1) furnace	0.105	after 1983
	one (1) water heater	0.72	1995
Katherine Parker	one (1) boiler	2.937	1981
	three (3) water heaters	0.156, each	2008 (2); 2009
Lamda Chi	three (3) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2010 (both)
Lynn Hall	one (1) boiler	4.185	1978
Ogle Center	two (2) water heaters	0.75, each	1999 (both)
Phi Mu	three (3) furnaces	0.12 (2); 0.08	after 1983
	two (2) water heaters	0.199, each	2008 (both)
Presidents House	four (4) furnaces	0.125; 0.175 (2); 0.06	after 1983
Parker Auditorium	one (1) boiler	3.357	1947
Science Center	two (2) boilers	6.0, each	1999 (both)
	two (2) water heaters	0.72, each	1999 (both)
Science Hall	one (1) boiler	2.5	1986
	five (5) furnaces	0.06; 0.08; 0.1 (2); 0.12	after 1983
Wiley Hall	one (1) boiler	2.937	1963
	one (1) water heater	0.72	2005
44 Clemmons	one (1) furnace	0.12	after 1983
52 Clemmons	one (1) furnace	0.1	after 1983
	one (1) water heater	0.034	1996
60 Clemmons	one (1) furnace	0.1	after 1983
124 Clemmons	one (1) furnace	0.12	after 1983
134 Clemmons	one (1) furnace	0.08	after 1983

153 Clemmons	one (1) furnace	0.057	after 1983
	one (1) water heater	0.034	1994
163 Clemmons	one (1) furnace	0.1	after 1983
164 Clemmons	one (1) furnace	0.08	after 1983
175 Clemmons	one (1) furnace	0.12	after 1983
176 Clemmons	one (1) furnace	0.125	after 1983
	one (1) water heater	0.04	2000
215 Clemmons	one (1) furnace	0.11	after 1983
340 File Street	one (1) furnace	0.08	after 1983
347 File Street	one (1) furnace	0.1	after 1983
348 File Street	one (1) furnace	0.1	after 1983
360 File Street	one (1) furnace	0.1	after 1983
372 File Street	one (1) furnace	0.1	after 1983
129 Fisher Street	one (1) furnace	0.115	after 1983
	one (1) water heater	0.04	2003
105 Garritt Street	one (1) furnace	0.15	after 1983
	one (1) water heater	0.04	2006
106 Garritt Street	one (1) furnace	0.1	after 1983
107 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2003
120 Garritt Street	one (1) furnace	0.1	after 1983
132 Garritt Street	one (1) furnace	0.12	after 1983
133 Garritt Street	one (1) furnace	0.1	after 1983
144 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	1998
145 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.075, each	after 1983
146 Garritt Street	one (1) furnace	0.1	after 1983
156 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2002
157 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2007
167 Garritt Street	one (1) furnace	0.12	after 1983
203 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.075, each	after 1983
221 Garritt Street	one (1) furnace	0.08	after 1983

174 Greenwood Street	one (1) furnace	0.08	after 1983
Madison Avenue Apartments 1-3	three (3) furnaces	0.05, each	after 1983
	three (3) water heaters	0.04, each	1984 (2); 2006
318 Main Street	one (1) furnace	0.1	after 1983
333 Prospect Street	one (1) furnace	0.125	after 1983
335 Prospect Street	one (1) furnace	0.08	after 1983
85 Young Street	one (1) furnace	0.125	after 1983
	one (1) water heater	0.04	2000
87 Young Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2003
95 Young Street	one (1) furnace	0.08	after 1983
103 Young Street	one (1) furnace	0.08	after 1983

(b) One (1) natural gas-fired emergency generator, located at the Science Center, constructed on November 16, 1999, with a maximum heat input capacity of 0.87 MMBtu/hr.

This unit is considered an existing affected source under 40 CFR 63, Subpart ZZZZ.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.1.1 Particulate Emission Limitations [326 IAC 6-2]

- (a) Pursuant to 326 IAC 6-2-3(d), particulate emissions from the following facilities shall in no case exceed 0.8 pound per MMBtu heat input:

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Ayres Stadium	two (2) gas unit heaters	0.1, each	1972 (both)
Parker Auditorium	one (1) boiler	3.357	1947
Wiley Hall	one (1) boiler	2.937	1963

- (b) The facilities listed below are subject to the requirements of 326 IAC 6-2-3 because the source is located in Jefferson County and each facility began operation after June 8, 1972. Pursuant to 326 IAC 6-2-3, particulate emissions from each of the facilities listed shall be limited by the following equation:

$$P_t = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

Where:
 C = 50 u/m³

Pt = pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)
 Q = total source max. operating indirect heating capacity (Q = 12 MMBtu/hr)
 N = number of stacks (N = 1)
 a = plume rise factor (a = 0.67)
 h = stack height (h = 30 ft)

Pursuant to 326 IAC 6-2-3(e), particulate emissions from the following facilities shall in no case exceed 0.6 pound per MMBtu heat input.

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Campus Center	two (2) boilers	2.52; 2.108	1982; 1980
Campus Security	one (1) boiler	0.09	1975
Center for Fine Arts	one (1) boiler	4.185	1975
	one (1) kiln	0.475	1974
Donner Hall	one (1) boiler	2.836	1975
Duggan Library	two (2) boilers	3.78; 3.5	1975 (both)
Kappa Alpha Theta	one (1) boiler	2.5426	1980
Katherine Parker	one (1) boiler	2.937	1981
Lynn Hall	one (1) boiler	4.185	1978

- (c) Pursuant to 326 IAC 6-2-4(a), particulate emissions from indirect heating facilities constructed after September 21, 1983 shall be limited to the following:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input; and
 Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

For a total source maximum operating capacity rating (Q) less than 10 MMBtu/hr, particulate emissions (Pt) shall not exceed 0.6 pound per MMBtu of heat input. For Q greater than or equal to 10,000 MMBtu/hr, Pt shall not exceed 0.1 pound per MMBtu of heat input.

Year Constructed	Building	Units	Q	Pt
1984	Madison Avenue Apartments 1&2	two (2) water heaters	35.6526+0.04*2 = 35.7326	0.43
1986	Science Hall	one (1) boiler	35.7326+2.5 = 38.2326	0.42

Year Constructed	Building	Units	Q	Pt
1994	Administration Building; 153 Clemmons	one (1) boiler; one (1) water heater	$38.2326+1.5+0.034 = 39.7666$	0.42
1995	Donner Hall; Horner Center; Kappa Alpha Theta	one (1) water heater; two (2) boilers, one (1) water heater; one (1) water heater	$39.7666+ 0.72+3.55 +2.176+0.24+0.72 = 47.1726$	0.40
1996	52 Clemmons	one (1) water heater	$47.1726+0.034 = 47.2066$	0.40
1998	144 Garritt Street	one (1) water heater	$47.2066+0.04 = 47.2466$	0.40
1999	Ogle Center; Science Center	two (2) water heaters; two (2) boilers, two (2) water heaters	$47.2466+(0.75*2)+(0.6*2)+(0.72*2) = 51.3866$	0.39
2000	176 Clemmons; 85 Young Street	one (1) water heater; one (1) water heater	$51.3866+0.04+0.04 = 51.4666$	0.39
2001	Beta/Coulter House; Chi Omega	two (2) boilers; two (2) water heaters	$51.4666+0.5+0.3+(0.199*2) = 52.6646$	0.39
2002	Classic Hall; 156 Garritt Street	two (2) boilers; one (1) water heater	$52.6646+1.248+0.164+0.04=54.1166$	0.39
2003	Child Care; Greenwood Suites; 129 Fisher Street; 107 Garritt Street; 87 Young Street	five (5) water heaters (1 each location)	$54.1166+0.04+0.56+0.04+0.04+0.04 = 54.8366$	0.38
2005	Wiley Hall	one (1) water heater	$54.8366+0.72 = 55.5566$	0.38
2006	Alpha Delta Pi; Ayres Stadium; Campus Center Kitchen; Donner Hall; 105 Garritt Street; Madison Avenue Apartment 3	two (2) water heaters; one (1) water heater; one (1) water heater; one (1) boiler; one (1) water heater; one (1) water heater	$55.5566+(0.199*2)+0.199+0.36+3.392+0.04+0.04 = 59.9856$	0.38
2007	Campus Center; Campus Center Kitchen; 157 Garritt Street	one (1) water heater; one (1) boiler; one (1) water heater	$59.9856+0.18+0.63+0.04 = 60.8356$	0.37
2008	Blythe Hall; Crowe Hall; Hendricks Hall; Jordan House; Katherine Parker; Phi Mu	one (1) water heater; two (2) boilers, two (2) water heaters; two (2) boilers; two (2) water heaters; two (2) water heaters; two (2) water heaters	$60.8356+0.199+(0.75*2)+(0.199*2)+(0.03*2)+(0.199*2)+(0.156*2)+(0.199*2) = 64.1006$	0.37
2009	Katherine Parker	one (1) water heater	$64.1006+0.156 = 64.2566$	0.37
2010	Lamda Chi	two (2) water heaters	$64.2566+(0.199*2) = 64.6546$	0.37

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (b) One (1) natural gas-fired emergency generator, located at the Science Center, constructed on November 16, 1999, with a maximum heat input capacity of 0.87 MMBtu/hr.

This unit is considered an existing affected source under 40 CFR 63, Subpart ZZZZ.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

E.1.1 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-82][40 CFR 63, Subpart ZZZZ]

The Permittee which owns or operates a stationary RICE at an area source of HAP emissions shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ:

- (1) 40 CFR 63.6580
- (2) 40 CFR 63.6585
- (3) 40 CFR 63.6590(a)(1)(iii), (b)(3)
- (4) 40 CFR 63.6665
- (5) 40 CFR 63.6670
- (6) 40 CFR 63.6675

The entire text of 40 CFR 63, Subpart ZZZZ is included as Attachment A of this permit.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	Hanover College
Address:	359 LaGrange Road
City:	Hanover, Indiana 47243
Phone #:	(812) 866-7241
MSOP #:	M077-28878-00004

I hereby certify that Hanover College is :

still in operation.

no longer in operation.

I hereby certify that Hanover College is :

in compliance with the requirements of MSOP M077-28878-00004.

not in compliance with the requirements of MSOP M077-28878-00004.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FAX NUMBER: (317) 233-6865

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF "MALFUNCTION" AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ _____ AM / PM
ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____
ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:
CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Mail to: Permit Administration and Support Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Hanover College
359 LaGrange Road
Hanover, Indiana 47243

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)
4. I hereby certify that Hanover College, located at 359 LaGrange Road, Hanover, Indiana 47243, has constructed the natural gas-fired combustion units at the source in conformity with the requirements and intent of the permit application received by the Office of Air Quality on January 14, 2010, and as permitted pursuant to New Source Construction Permit and Minor Source Operating Permit No. M077-28878-00004, Plant ID No. 077-00004 issued on _____.
5. **Permittee, please cross out the following statement if it does not apply:** Additional (operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature _____
Date _____

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana
on this _____ day of _____, 20____. My Commission expires: _____.

Signature _____
Name _____ (typed or printed)

Attachment A

M077-28878-00004

**Hanover College
359 LaGrange Road
Hanover, IN 47243**

Title 40: Protection of Environment

**PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS FOR SOURCE CATEGORIES**

**Subpart ZZZZ—National Emissions Standards for Hazardous Air
Pollutants for Stationary Reciprocating Internal Combustion Engines**

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Source: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008]

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraph (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(h).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions; or

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of §63.6645(h) and the requirements of §§63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) A stationary RICE which is an existing spark ignition 4 stroke rich burn (4SRB) stationary RICE located at an area source, an existing spark ignition 4SRB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source, an existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, an existing compression ignition (CI) stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, does not have to meet the requirements of this subpart and of subpart A of this part. No initial notification is necessary.

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that is a new or reconstructed stationary RICE located at an area source, or is a new or reconstructed stationary RICE located at a major source of HAP emissions and is a spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of less than 500 brake HP, a spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of less than 250 brake HP, or a 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP, a stationary RICE with a site rating of less than or equal to 500 brake HP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP, or a compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP, must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008]

§ 63.6595 When do I have to comply with this subpart?

(a) *Affected Sources.* (1) If you have an existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations and operating limitations no later than June 15, 2007.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in §63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008]

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a and 2a to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE, an existing 4SLB stationary RICE, or an existing CI stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

[73 FR 3605, Jan. 18, 2008]

§ 63.6601 What emission limitations must I meet if I own or operate a 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations and operating limitations in this subpart that apply to you at all times, except during periods of startup, shutdown, and malfunction.

(b) If you must comply with emission limitations and operating limitations, you must operate and maintain your stationary RICE, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during startup, shutdown, and malfunction.

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions in §63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements in §63.7(e)(1) and under the specific conditions that this subpart specifies in Table 4. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

(c) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §63.7(e)(1).

(d) You must conduct three separate test runs for each performance test required in this section, as specified in §63.7(e)(3). Each test run must last at least 1 hour.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 1})$$

Where:

C_i = concentration of CO or formaldehyde at the control device inlet,

C_o = concentration of CO or formaldehyde at the control device outlet, and

R = percent reduction of CO or formaldehyde emissions.

(2) You must normalize the carbon monoxide (CO) or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO₂). If pollutant concentrations are to be corrected to 15 percent oxygen and CO₂ concentration is measured in lieu of oxygen concentration measurement, a CO₂ correction factor is needed. Calculate the CO₂ correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, section 5.2, and the following equation:

$$F_o = \frac{0.209 F_d}{F_c} \quad (\text{Eq. 2})$$

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dm^3 / J (dscf/ 10^6 Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dm^3 / J (dscf/ 10^6 Btu).

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent oxygen, as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \quad (\text{Eq. 3})$$

Where:

X_{CO_2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 - 15 percent O_2 , the defined O_2 correction value, percent.

(iii) Calculate the NO_x and SO_2 gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \quad (\text{Eq. 4})$$

Where:

$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

§ 63.6625 What are my monitoring, installation, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either oxygen or CO₂ at both the inlet and the outlet of the control device according to the requirements in paragraphs (a)(1) through (4) of this section.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in §63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in §63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in §63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO₂ concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in §63.8.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?

(a) You must demonstrate initial compliance with each emission and operating limitation that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.6645.

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must monitor continuously at all times that the stationary RICE is operating.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?

(a) You must demonstrate continuous compliance with each emission limitation and operating limitation in Tables 1a and 1b and Tables 2a and 2b of this subpart that apply to you according to methods specified in Table 6 of this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b and Tables 2a and 2b of this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating

parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) [Reserved]

(d) Consistent with §§63.6(e) and 63.7(e)(1), deviations from the emission or operating limitations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with §63.6(e)(1). For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations.

Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR §94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate any stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing CI stationary RICE, an existing emergency stationary RICE, an existing limited use emergency stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

(a) If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions or a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions, you must submit all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified.

(b) As specified in §63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) As specified in §63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with §63.6590(b), your notification should include the information in §63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in §63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to §63.10(d)(2).

[73 FR 3606, Jan. 18, 2008]

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (5) of this section.

(1) The first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in §63.6595.

(2) The first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in §63.6595.

(3) Each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period, the compliance report must include the information in §63.10(d)(5)(i).

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in §63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

§ 63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(3), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).

(2) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in §63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.*, superseded) versions of the performance evaluation plan as required in §63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in §63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

§ 63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You can keep the records off-site for the remaining 3 years.

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you. If you own or operate any stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions: An existing 2SLB RICE, an existing 4SLB stationary RICE, an existing CI stationary RICE, an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[73 FR 3606, Jan. 18, 2008]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in §63.6600 under §63.6(g).

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in §63.6610(b).

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Public Law 101–549, 104 Stat. 2399).

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.
- (4) Fails to satisfy the general duty to minimize emissions established by §63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO₂.

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary RICE whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local

utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Stationary RICE used for peak shaving are not considered emergency stationary RICE. Stationary ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines. Emergency stationary RICE with a site-rating of more than 500 brake HP located at a major source of HAP emissions that were installed prior to June 12, 2006, may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by the manufacturer, the vendor, or the insurance company associated with the engine. Required testing of such units should be minimized, but there is no time limit on the use of emergency stationary RICE in emergency situations and for routine testing and maintenance. Emergency stationary RICE with a site-rating of more than 500 brake HP located at a major source of HAP emissions that were installed prior to June 12, 2006, may also operate an additional 50 hours per year in non-emergency situations. Emergency stationary RICE with a site-rating of more than 500 brake HP located at a major source of HAP emissions that were installed on or after June 12, 2006, must comply with requirements specified in 40 CFR 60.4243(d).

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes "rich" glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The "lean" glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in §63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO₂, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.*, remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in §63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to §63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to §63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_x(such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart P of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

[As stated in §63.6600, you must comply with the following emission limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions at 100 percent load plus or minus 10 percent]

For each...	You must meet the following emission limitations...
1. 4SRB stationary RICE	a. reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007;
	or
	b. limit the concentration of formaldehyde in the stationary RICE exhaust 350 ppbvd or less at 15 percent O ₂ .

[73 FR 3607, Jan. 18, 2008]

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

[As stated in §§63.6600, 63.6630 and 63.6640, you must comply with the following operating emission limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions]

For each...	You must meet the following operating limitation...
1. 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and
4SRB stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and using NSCR.	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F.
2. 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
4SRB stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and not using NSCR.	

[73 FR 3607, Jan. 18, 2008]

Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

[As stated in §§63.6600 and 63.6601, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent]

For each...	You must meet the following emission limitation...
1. 2SLB stationary RICE	a. reduce CO emissions by 58 percent or more;
	or
	b. limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O ₂ . If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O ₂ until June 15, 2007.
2. 4SLB stationary RICE	a. reduce CO emissions by 93 percent or more;
	or
	b. limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O ₂ .
3. CI stationary RICE	a. reduce CO emissions by 70 percent or more;
	or
	b. limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O ₂ .

[73 FR 3608, Jan. 18, 2008]

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and 4SLB Burn Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

[As stated in §§63.6600, 63.6601, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary]

For each...	You must meet the following operating limitation...
1. 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to reduce CO emissions and using an oxidation catalyst; or 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary

	RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.
2. 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to reduce CO emissions and not using an oxidation catalyst; or 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst	Comply with any operating limitations approved by the Administrator.

[73 FR 3608, Jan. 18, 2008]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

[As stated in §§63.6615 and 63.6620, you must comply with the following subsequent performance test requirements]

For each . . .	Complying with the requirement to . . .	You must . . .
1. 2SLB and 4SLB stationary RICE and CI stationary RICE	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually. ¹
2. 4SRB stationary RICE with a brake horsepower ≥5,000	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually. ¹
3. Stationary RICE (all stationary RICE subcategories and all brake horsepower ratings)	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually. ¹

¹After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

[As stated in §§63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE]

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. Reduce CO emissions	i. Measure the O ₂ at the inlet and outlet of the control device; and	(1) Portable CO and O ₂ analyzer	(a) Using ASTM D6522–00 (2005) ^a (incorporated by reference, see §63.14). Measurements to determine O ₂ must be made at the same time as the measurements for CO

				concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) Portable CO and O ₂ analyzer	(a) Using ASTM D6522–00 (2005) ^a (incorporated by reference, see §63.14) or Method 10 of 40 CFR, appendix A. The CO concentration must be at 15 percent O ₂ , dry basis.
2. 4SRB stationary RICE	a. Reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A §63.7(d)(1)(i)	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O ₂ at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522–00 (2005).	(a) Measurements to determine O ₂ concentration must be made at the same time as the measurements for formaldehyde concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde concentration.
		iv. Measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03 ^b , provided in ASTM D6348–03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A §63.7(d)(1)(i)	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O ₂ concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522–00 (2005)	(a) Measurements to determine O ₂ concentration must be made at the same time and location as the measurements for formaldehyde concentration.
		iii. Measure moisture content of the stationary	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40	(a) Measurements to determine moisture content must be made at the same

		RICE exhaust at the sampling port location; and	CFR part 63, appendix A, or ASTM D 6348–03	time and location as the measurements for formaldehyde concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03 ^b , provided in ASTM D6348–03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

^aYou may also use Methods 3A and 10 as options to ASTM–D6522–00 (2005). You may obtain a copy of ASTM–D6522–00 (2005) from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

^bYou may obtain a copy of ASTM–D6348–03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[73 FR 3609, Jan. 18, 2008]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations and Operating Limitations

[As stated in §§63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following]

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. 2SLB and 4SLB stationary RICE and CI stationary RICE	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. the average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. 2SLB and 4SLB stationary RICE and CI stationary RICE	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating

		parameters (if any) during the initial performance test.
3. 2SLB and 4SLB stationary RICE and CI stationary RICE	a. Reduce CO emissions, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O ₂ or CO ₂ at both the inlet and outlet of the oxidation catalyst according to the requirements in §63.6625(a); and
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using §63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
4. 4SRB stationary RICE	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
5. 4SRB stationary RICE	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
6. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
7. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and

		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations and Operating Limitations

[As stated in §63.6640, you must continuously comply with the emissions and operating limitations as required by the following]

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. 2SLB and 4SLB stationary RICE and CI stationary RICE	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ¹ ; and
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. 2SLB and 4SLB stationary RICE and CI stationary RICE	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ¹ ; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. 2SLB and 4SLB stationary RICE and CI stationary RICE	a. Reduce CO emissions and using a CEMS	i. Collecting the monitoring data according to §63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction of CO emissions according to §63.6620; and
		ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period; and

		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. 4SRB stationary RICE	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. 4SRB stationary RICE	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		ii. reducing these data to 4-hour rolling averages;
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. 4SRB stationary RICE with a brake horsepower $\geq 5,000$	Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved ¹ .
7. Stationary RICE	Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ¹ ; and
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. Stationary RICE	Limit the concentration of formaldehyde in the stationary RICE exhaust and not using	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration

	oxidation catalyst or NSCR	limit ¹ ; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

¹After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

[As stated in §63.6650, you must comply with the following requirements for reports]

You must submit a(n)	The report must contain . . .	You must submit the report . . .
1. Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or	i. Semiannually according to the requirements in §63.6650(b).
	b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in §63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), the information in §63.6650(e); or	i. Semiannually according to the requirements in §63.6650(b).
	c. If you had a startup, shutdown or malfunction during the reporting period, the information in §63.10(d)(5)(i)	i. Semiannually according to the requirements in §63.6650(b).
2. An immediate startup, shutdown, and malfunction report if actions addressing the startup, shutdown, or malfunction were inconsistent with your startup, shutdown, or malfunction plan during the reporting period	a. Actions taken for the event; and	i. By fax or telephone within 2 working days after starting actions inconsistent with the plan.

	b. The information in §63.10(d)(5)(ii).	i. By letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authorities. (§63.10(d)(5)(ii))
3. Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in §63.6650.
	b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 3.a.i.
	c. Any problems or errors suspected with the meters	i. See item 3.a.i.

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ

[As stated in §63.6665, you must comply with the following applicable general provisions]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.1	General applicability of the General Provisions	Yes	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and abbreviations	Yes	
§63.4	Prohibited activities and circumvention	Yes	
§63.5	Construction and reconstruction	Yes	
§63.6(a)	Applicability	Yes	
§63.6(b)(1)–(4)	Compliance dates for new and reconstructed sources	Yes	
§63.6(b)(5)	Notification	Yes	
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes	
§63.6(c)(1)–(2)	Compliance dates for existing sources	Yes	

§63.6(c)(3)–(4)	[Reserved]		
§63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes	
§63.6(d)	[Reserved]		
§63.6(e)(1)	Operation and maintenance	Yes	
§63.6(e)(2)	[Reserved]		
§63.6(e)(3)	Startup, shutdown, and malfunction plan	Yes	
§63.6(f)(1)	Applicability of standards except during startup shutdown malfunction (SSM)	Yes	
§63.6(f)(2)	Methods for determining compliance	Yes	
§63.6(f)(3)	Finding of compliance	Yes	
§63.6(g)(1)–(3)	Use of alternate standard	Yes	
§63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§63.6(i)	Compliance extension procedures and criteria	Yes	
§63.6(j)	Presidential compliance exemption	Yes	
§63.7(a)(1)–(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§63.6610 and 63.6611.
§63.7(a)(3)	CAA section 114 authority	Yes	
§63.7(b)(1)	Notification of performance test	Yes	
§63.7(b)(2)	Notification of rescheduling	Yes	
§63.7(c)	Quality assurance/test plan	Yes	
§63.7(d)	Testing facilities	Yes	
§63.7(e)(1)	Conditions for conducting performance tests	Yes	
§63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at §63.6620.
§63.7(e)(3)	Test run duration	Yes	
§63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes	

§63.7(f)	Alternative test method provisions	Yes	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes	
§63.7(h)	Waiver of tests	Yes	
§63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at §63.6625.
§63.8(a)(2)	Performance specifications	Yes	
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring for control devices	No	
§63.8(b)(1)	Monitoring	Yes	
§63.8(b)(2)–(3)	Multiple effluents and multiple monitoring systems	Yes	
§63.8(c)(1)	Monitoring system operation and maintenance	Yes	
§63.8(c)(1)(i)	Routine and predictable SSM	Yes	
§63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes	
§63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	Yes	
§63.8(c)(2)–(3)	Monitoring system installation	Yes	
§63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§63.8(c)(6)–(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§63.8(d)	CMS quality control	Yes	
§63.8(e)	CMS performance evaluation	Yes	Except for §63.8(e)(5)(ii), which applies to COMS.
§63.8(f)(1)–(5)	Alternative monitoring method	Yes	
§63.8(f)(6)	Alternative to relative accuracy test	Yes	
§63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§63.6635 and 63.6640.
§63.9(a)	Applicability and State delegation	Yes	

	of notification requirements		
§63.9(b)(1)–(5)	Initial notifications	Yes	Except that §63.9(b)(3) is reserved.
§63.9(c)	Request for compliance extension	Yes	
§63.9(d)	Notification of special compliance requirements for new sources	Yes	
§63.9(e)	Notification of performance test	Yes	
§63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(1)	Notification of performance evaluation	Yes	
§63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
§63.9(h)(1)–(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved.
§63.9(i)	Adjustment of submittal deadlines	Yes	
§63.9(j)	Change in previous information	Yes	
§63.10(a)	Administrative provisions for record keeping/reporting	Yes	
§63.10(b)(1)	Record retention	Yes	
§63.10(b)(2)(i)–(v)	Records related to SSM	Yes	
§63.10(b)(2)(vi)–(xi)	Records	Yes	
§63.10(b)(2)(xii)	Record when under waiver	Yes	
§63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§63.10(b)(2)(xiv)	Records of supporting documentation	Yes	
§63.10(b)(3)	Records of applicability determination	Yes	
§63.10(c)	Additional records for sources using CEMS	Yes	Except that §63.10(c)(2)–(4) and (9) are reserved.
§63.10(d)(1)	General reporting requirements	Yes	
§63.10(d)(2)	Report of performance test results	Yes	

§63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.10(d)(4)	Progress reports	Yes	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	Yes	
§63.10(e)(1) and (2)(i)	Additional CMS reports	Yes	
§63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§63.10(e)(3)	Excess emission and parameter exceedances reports	Yes	Except that §63.10(e)(3)(i)(C) is reserved.
§63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§63.10(f)	Waiver for recordkeeping/reporting	Yes	
§63.11	Flares	No	
§63.12	State authority and delegations	Yes	
§63.13	Addresses	Yes	
§63.14	Incorporation by reference	Yes	
§63.15	Availability of information	Yes	

[73 FR 3610, Jan. 18, 2008]

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[Subpart ZZZZ--NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES](#)

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for a New Source Construction and
Minor Source Operating Permit (MSOP)

Source Description and Location

Source Name: Hanover College
Source Location: 359 LaGrange Road, Hanover, IN 47243
County: Jefferson
SIC Code: 8200
Operation Permit No.: M077-28878-00004
Permit Reviewer: Meredith W. Jones

On January 14, 2010, the Office of Air Quality (OAQ) received an application from Hanover College related to the operation of natural gas-fired combustion units at an existing college.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Jefferson County (Hanover Township).

Pollutant	Designation
SO ₂	Cannot be classified.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Basic nonattainment designation effective federally April 5, 2005, for the Madison Twp for PM _{2.5} . The remainder of Jefferson County is unclassifiable or attainment effective April 5, 2005, for PM _{2.5} .	

- (a) *Ozone Standards*
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Jefferson County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) *PM_{2.5}*
Jefferson County (Hanover Township) has been classified as attainment for PM_{2.5}. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions and the effective date of these rules was July 15, 2008. Indiana has three

years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM₁₀ emissions as a surrogate for PM_{2.5} emissions until 326 IAC 2-2 is revised.

- (c) **Other Criteria Pollutants**
 Jefferson County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

- (a) The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-6.1 (Minor Source Operating Permits) applicability.
- (b) Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission units:

- (a) One hundred fifty-seven (157) natural gas-fired combustion units:

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Alpha Delta Pi	three (3) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2006 (both)
Administration Building	one (1) boiler	1.5	1994
Ayres Stadium	one (1) furnace	0.06	after 1983
	one (1) water heater	0.199	2006
	one (1) clothes dryer	0.292	after 1983
	two (2) gas unit heaters	0.1, each	1972 (both)
Beta/Coulter House	two (2) boilers	0.5; 0.3	2001 (both)
Blythe Hall	three (3) furnaces	0.12, each	after 1983
	one (1) water heater	0.199	2008
Brown Chapel	one (1) furnace	0.1	after 1983
Campus Center	two (2) boilers	2.52; 2.108	1982; 1980
	one (1) water heater	0.18	2007
Campus Center Kitchen	one (1) boiler	0.63	2007
	two (2) water heaters	0.36, each	2004; 2006
Campus Security	one (1) boiler	0.09	1975

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Center for Fine Arts	one (1) boiler	4.185	1975
	one (1) kiln	0.475	1974
Child Care	two (2) furnaces	0.1, each	after 1983
	one (1) water heater	0.04	2003
Chi Omega	two (2) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2001 (both)
Classic Hall	two (2) boilers	1.248; 0.164	2002 (both)
Crowe Hall	two (2) boilers	0.75, each	2008 (both)
	two (2) water heaters	0.199, each	2008 (both)
Donner Hall	one (1) boiler	3.392	2006
	one (1) boiler	2.836	1975
	one (1) water heater	0.72	1995
Duggan Library	two (2) boilers	3.78; 3.5	1975 (both)
File House	one (1) furnace	0.08	after 1983
Greenwood Suites	one (1) furnace	0.96	after 1983
	one (1) water heater	0.56	2003
Hendricks Hall	two (2) boilers	0.03, each	2008 (both)
Horner Center	two (2) boilers	3.55; 2.176	1995 (both)
	one (1) water heater	0.24	1995
	one (1) clothes dryer	0.146	2003
Jordan House	two (2) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2008 (both)
Kappa Alpha Theta	one (1) boiler	2.5426	1980
	one (1) furnace	0.105	after 1983
	one (1) water heater	0.72	1995
Katherine Parker	one (1) boiler	2.937	1981
	three (3) water heaters	0.156, each	2008 (2); 2009
Lamda Chi	three (3) furnaces	0.12, each	after 1983
	two (2) water heaters	0.199, each	2010 (both)
Lynn Hall	one (1) boiler	4.185	1978
Ogle Center	two (2) water heaters	0.75, each	1999 (both)
Phi Mu	three (3) furnaces	0.12 (2); 0.08	after 1983
	two (2) water heaters	0.199, each	2008 (both)

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Presidents House	four (4) furnaces	0.125; 0.175 (2); 0.06	after 1983
Parker Auditorium	one (1) boiler	3.357	1947
Science Center	two (2) boilers	6.0, each	1999 (both)
	two (2) water heaters	0.72, each	1999 (both)
Science Hall	one (1) boiler	2.5	1986
	five (5) furnaces	0.06; 0.08; 0.1 (2); 0.12	after 1983
Wiley Hall	one (1) boiler	2.937	1963
	one (1) water heater	0.72	2005
44 Clemmons	one (1) furnace	0.12	after 1983
52 Clemmons	one (1) furnace	0.1	after 1983
	one (1) water heater	0.034	1996
60 Clemmons	one (1) furnace	0.1	after 1983
124 Clemmons	one (1) furnace	0.12	after 1983
134 Clemmons	one (1) furnace	0.08	after 1983
153 Clemmons	one (1) furnace	0.057	after 1983
	one (1) water heater	0.034	1994
163 Clemmons	one (1) furnace	0.1	after 1983
164 Clemmons	one (1) furnace	0.08	after 1983
175 Clemmons	one (1) furnace	0.12	after 1983
176 Clemmons	one (1) furnace	0.125	after 1983
	one (1) water heater	0.04	2000
215 Clemmons	one (1) furnace	0.11	after 1983
340 File Street	one (1) furnace	0.08	after 1983
347 File Street	one (1) furnace	0.1	after 1983
348 File Street	one (1) furnace	0.1	after 1983
360 File Street	one (1) furnace	0.1	after 1983
372 File Street	one (1) furnace	0.1	after 1983
129 Fisher Street	one (1) furnace	0.115	after 1983
	one (1) water heater	0.04	2003
105 Garritt Street	one (1) furnace	0.15	after 1983
	one (1) water heater	0.04	2006
106 Garritt Street	one (1) furnace	0.1	after 1983

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
107 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2003
120 Garritt Street	one (1) furnace	0.1	after 1983
132 Garritt Street	one (1) furnace	0.12	after 1983
133 Garritt Street	one (1) furnace	0.1	after 1983
144 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	1998
145 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.075, each	after 1983
146 Garritt Street	one (1) furnace	0.1	after 1983
156 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2002
157 Garritt Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2007
167 Garritt Street	one (1) furnace	0.12	after 1983
203 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.075, each	after 1983
221 Garritt Street	one (1) furnace	0.08	after 1983
174 Greenwood Street	one (1) furnace	0.08	after 1983
Madison Avenue Apartments 1-3	three (3) furnaces	0.05, each	after 1983
	three (3) water heaters	0.04, each	1984 (2); 2006
318 Main Street	one (1) furnace	0.1	after 1983
333 Prospect Street	one (1) furnace	0.125	after 1983
335 Prospect Street	one (1) furnace	0.08	after 1983
85 Young Street	one (1) furnace	0.125	after 1983
	one (1) water heater	0.04	2000
87 Young Street	one (1) furnace	0.1	after 1983
	one (1) water heater	0.04	2003
95 Young Street	one (1) furnace	0.08	after 1983
103 Young Street	one (1) furnace	0.08	after 1983

- (b) One (1) natural gas-fired emergency generator, located at the Science Center, constructed on November 16, 1999, with a maximum heat input capacity of 0.87 MMBtu/hr.

This unit is considered an existing affected source under 40 CFR 63, Subpart ZZZZ.

Enforcement Issues

IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction permit rules.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – MSOP

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	0.72
PM ₁₀ ⁽¹⁾	2.86
PM _{2.5}	2.86
SO ₂	0.23
NO _x	38.53
VOC	2.10
CO	31.69

(1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM₁₀), not particulate matter (PM), is considered as a "regulated air pollutant".

HAPs	Potential To Emit (tons/year)
Benzene	8.88E-04
Dichlorobenzene	4.53E-04
Formaldehyde	3.98E-02
Hexane	6.79E-01
Toluene	1.37E-03
Lead	1.89E-04
Cadmium	4.15E-04
Chromium	5.28E-04
Manganese	1.43E-04
Nickel	7.92E-04
1,3-Butadiene	5.81E-05
2,2,4-Trimethylpentane	5.44E-05
Acetaldehyde	1.82E-03
Acrolein	1.12E-03
Biphenyl	4.61E-05
Methanol	5.44E-04
n-Hexane	2.42E-04
TOTAL HAPs	0.73

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of NO_x and CO are each less than one hundred (100) tons per year, but greater than or equal to twenty-five (25) tons per year. The PTE of all other regulated criteria pollutants are less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1. A Minor Source Operating Permit (MSOP) will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After August 17, 1971 (40 CFR 60, Subpart D) (326 IAC 12) are not included in the permit for any of the boilers because none of these units has a heat input rate of more than 250 million British thermal units per hour (MMBtu/hr).
- (b) The requirements of the New Source Performance Standard for Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60, Subpart Db) (326 IAC 12) are not included in the permit for any of the boilers because none of these units has a heat input capacity of greater than 100 million MMBtu/hr.
- (c) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60, Subpart Dc) (326 IAC 12) are not included in the permit for any of the boilers because none of these units has a maximum design heat input capacity of 100 million MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.
- (d) The requirements of the New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60, Subpart JJJJ) (326 IAC 12) are not included in the permit for the one (1) natural gas-fired emergency generator, located at the Science Center because construction of this unit commenced prior to June 12, 2006.
- (e) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (f) The one (1) natural gas-fired emergency generator, located at the Science Center, is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) (326 IAC 20-82) because this unit is an existing (construction before June 12, 2006) stationary reciprocating internal combustion engine (RICE) located at an area source of HAP emissions.

Applicable portions of the NESHAP are the following:

- (1) 40 CFR 63.6580
- (2) 40 CFR 63.6585
- (3) 40 CFR 63.6590(a)(1)(iii), (b)(3)
- (4) 40 CFR 63.6665
- (5) 40 CFR 63.6670
- (6) 40 CFR 63.6675

Pursuant to 40 CFR 63.6590(b)(3) and 40 CFR 63.6665, the existing natural gas-fired emergency generator (4 stroke lean burn) does not have to meet the requirements of 40 CFR 63, Subpart A (General Provisions) because it is an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, an existing emergency stationary RICE, and a stationary RICE located at an area source of HAP emissions.

- (g) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (h) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

326 IAC 2-6.1 (Minor Source Operating Permits (MSOP))

MSOP applicability is discussed under the Permit Level Determination – MSOP section above.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is not a major stationary source under PSD (326 IAC 2-2) because the potential to emit of all regulated attainment pollutants are less than 250 tons per year, each, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

326 IAC 2-6 (Emission Reporting)

Pursuant to 326 IAC 2-6-1, this source is not subject to this rule because it is not required to have an operating permit under 326 IAC 2-7 (Part 70); it is not located in Lake, Porter, or LaPorte County; and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the

source is located, in a manner that would violate 326 IAC 6-4.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

None of the emission units at this source has the potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. Therefore, 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations) does not apply.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

None of the emission units at this source are subject to the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) because the unlimited potential VOC emissions from each emission unit are less than twenty-five (25) tons per year.

Natural Gas-fired Water Heaters and Boilers

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)

(a) The facilities listed below are subject to the requirements of 326 IAC 6-2-3 because the source is located in Jefferson County and each facility was existing and in operation on or before June 8, 1972. Pursuant to 326 IAC 6-2-3(d), particulate emissions from the following facilities shall in no case exceed 0.8 pound per MMBtu heat input:

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Ayres Stadium	two (2) gas unit heaters	0.1, each	1972 (both)
Parker Auditorium	one (1) boiler	3.357	1947
Wiley Hall	one (1) boiler	2.937	1963

(b) The facilities listed below are subject to the requirements of 326 IAC 6-2-3 because the source is located in Jefferson County and each facility began operation after June 8, 1972. Pursuant to 326 IAC 6-2-3, particulate emissions from each of the facilities listed shall be limited by the following equation:

$$Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

Where:

- C = 50 u/m³
- Pt = pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)
- Q = total source max. operating indirect heating capacity (Q = 12 MMBtu/hr)
- N = number of stacks (N = 1)
- a = plume rise factor (a = 0.67)
- h = stack height (h = 30 ft)

Pursuant to 326 IAC 6-2-3(e), particulate emissions from the following facilities shall in no case exceed 0.6 pound per MMBtu heat input.

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Campus Center	two (2) boilers	2.52; 2.108	1982; 1980

Building	Type of Unit	Maximum Heat Input Capacity (MMBtu/hr)	Construction Date
Campus Security	one (1) boiler	0.09	1975
Center for Fine Arts	one (1) boiler	4.185	1975
	one (1) kiln	0.475	1974
Donner Hall	one (1) boiler	2.836	1975
Duggan Library	two (2) boilers	3.78; 3.5	1975 (both)
Kappa Alpha Theta	one (1) boiler	2.5426	1980
Katherine Parker	one (1) boiler	2.937	1981
Lynn Hall	one (1) boiler	4.185	1978

- (c) The facilities listed below are subject to the requirements of 326 IAC 6-2-4 because each facility began operation after September 21, 1983. Pursuant to 326 IAC 6-2-4(a), particulate emissions from the following indirect heating facilities shall be limited to the following:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input; and
 Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

For a total source maximum operating capacity rating (Q) less than 10 MMBtu/hr, particulate emissions (Pt) shall not exceed 0.6 pound per MMBtu of heat input. For Q greater than or equal to 10,000 MMBtu/hr, Pt shall not exceed 0.1 pound per MMBtu of heat input.

Year Constructed	Building	Units	Q	Pt
1984	Madison Avenue Apartments 1&2	two (2) water heaters	35.6526+0.04*2 = 35.7326	0.43
1986	Science Hall	one (1) boiler	35.7326+2.5 = 38.2326	0.42
1994	Administration Building; 153 Clemmons	one (1) boiler; one (1) water heater	38.2326+1.5+0.034 = 39.7666	0.42
1995	Donner Hall; Horner Center; Kappa Alpha Theta	one (1) water heater; two (2) boilers, one (1) water heater; one (1) water heater	39.7666 + 0.72+3.55 +2.176+0.24+0.72 = 47.1726	0.40
1996	52 Clemmons	one (1) water heater	47.1726+0.034 = 47.2066	0.40
1998	144 Garritt Street	one (1) water heater	47.2066+0.04 = 47.2466	0.40
1999	Ogle Center; Science Center	two (2) water heaters; two (2) boilers,	47.2466+(0.75*2)+(0.6*2)+(0.72*2) =	0.39

Year Constructed	Building	Units	Q	Pt
		two (2) water heaters	51.3866	
2000	176 Clemmons; 85 Young Street	one (1) water heater; one (1) water heater	$51.3866+0.04+0.04 = 51.4666$	0.39
2001	Beta/Coulter House; Chi Omega	two (2) boilers; two (2) water heaters	$51.4666+0.5+0.3+(0.199*2) = 52.6646$	0.39
2002	Classic Hall; 156 Garritt Street	two (2) boilers; one (1) water heater	$52.6646+1.248+0.164+0.04 = 54.1166$	0.39
2003	Child Care; Greenwood Suites; 129 Fisher Street; 107 Garritt Street; 87 Young Street	five (5) water heaters (1 each location)	$54.1166+0.04+0.56+0.04+0.04+0.04 = 54.8366$	0.38
2005	Wiley Hall	one (1) water heater	$54.8366+0.72 = 55.5566$	0.38
2006	Alpha Delta Pi; Ayres Stadium; Campus Center Kitchen; Donner Hall; 105 Garritt Street; Madison Avenue Apartment 3	two (2) water heaters; one (1) water heater; one (1) water heater; one (1) boiler; one (1) water heater; one (1) water heater	$55.5566+(0.199*2)+0.199+0.36+3.392+0.04+0.04 = 59.9856$	0.38
2007	Campus Center; Campus Center Kitchen; 157 Garritt Street	one (1) water heater; one (1) boiler; one (1) water heater	$59.9856+0.18+0.63+0.04 = 60.8356$	0.37
2008	Blythe Hall; Crowe Hall; Hendricks Hall; Jordan House; Katherine Parker; Phi Mu	one (1) water heater; two (2) boilers, two (2) water heaters; two (2) boilers; two (2) water heaters; two (2) water heaters; two (2) water heaters	$60.8356+0.199+(0.75*2)+(0.199*2)+(0.03*2)+(0.199*2)+(0.156*2)+(0.199*2) = 64.1006$	0.37
2009	Katherine Parker	one (1) water heater	$64.1006+0.156 = 64.2566$	0.37
2010	Lamda Chi	two (2) water heaters	$64.2566+(0.199*2) = 64.6546$	0.37

The AP-42 natural gas combustion emission factor for particulate matter (PM) is 0.00186 lb/MMBtu (7.6 lb/MMCF / 1020 MMBtu/MMCF), which is less than the 326 IAC 6-2 particulate emission limit for each of the units listed in the table above. Therefore, each of the natural gas combustion (indirect heating) units at this source is able to comply with the applicable 326 IAC 6-2 limit.

326 IAC 12 (New Source Performance Standards)

See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)

See Federal Rule Applicability Section of this TSD.

Compliance Determination, Monitoring and Testing Requirements
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There are no compliance determination, compliance monitoring, or testing requirements applicable to this source.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on January 14, 2010.

The operation of this source shall be subject to the conditions of the attached proposed New Source Construction and MSOP No. M077-28878-00004. The staff recommends to the Commissioner that this New Source Construction and MSOP be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Meredith Jones at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5176 or toll free at 1-800-451-6027 extension 4-5176.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Company Name: Hanover College
Address: 359 LaGrange Road, Hanover, IN 47243
Permit No.: M077-28878-00004
Reviewer: Meredith W. Jones
Date: 3/9/10

****Potential to Emit Summary****

Uncontrolled Potential Emissions (tons/yr)

Criteria Pollutants

<i>Emission Unit</i>	<i>PM</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>	<i>SO_x</i>	<i>NO_x</i>	<i>VOC</i>	<i>CO</i>
One hundred fifty-eight (158) natural gas-fired combustion units (MMBtu/Hr <100)	0.72	2.86	2.86	0.23	37.64	2.07	31.62
Emergency Generator (Science Center)	2.16E-03	1.68E-05	1.68E-05	1.28E-04	0.89	2.57E-02	0.07
Total	0.72	2.86	2.86	0.23	38.53	2.10	31.69

HAPs (tons/yr)

Benzene =	8.88E-04	tons/yr
Dichlorobenzene =	4.53E-04	tons/yr
Formaldehyde =	3.98E-02	tons/yr
Hexane* =	6.79E-01	tons/yr
Toluene =	1.37E-03	tons/yr
Lead =	1.89E-04	tons/yr
Cadmium =	4.15E-04	tons/yr
Chromium =	5.28E-04	tons/yr
Manganese =	1.43E-04	tons/yr
Nickel =	7.92E-04	tons/yr
1,3-Butadiene =	5.81E-05	tons/yr
2,2,4-Trimethylpentane =	5.44E-05	tons/yr
Acetaldehyde =	1.82E-03	tons/yr
Acrolein =	1.12E-03	tons/yr
Biphenyl =	4.61E-05	tons/yr
Methanol =	5.44E-04	tons/yr
n-Hexane =	2.42E-04	tons/yr
Total =	0.73	tons/yr

*Highest single HAP

Company Name: Hanover College
Address: 359 LaGrange Road, Hanover, IN 47243
Permit No.: M077-28878-00004
Reviewer: Meredith W. Jones
Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): Criteria Pollutants****
Units Constructed prior to September 21, 1983

	PM ¹	PM ₁₀ ¹	PM _{2.5}	SO ₂	NOx ²	VOC	CO
<i>Emission Factor (lbs/10⁶ scf)</i>	1.9	7.6	7.6	0.6	100	5.5	84.0

¹PM emission factor is filterable PM only. PM₁₀ emission factor is filterable and condensable PM combined.

²Emission Factors for NOx: Uncontrolled = 100; Low NOx Burner = 50; Low NOx Burners/Flue gas recirculation = 32.

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)						
				PM	PM ₁₀	PM _{2.5}	SO ₂	NOx	VOC	CO
Ayres Stadium	two (2) gas unit heaters	0.20	1.75	1.66E-03	6.66E-03	6.66E-03	5.26E-04	0.09	4.82E-03	0.07
Campus Center	two (2) boilers	4.63	40.54	3.85E-02	1.54E-01	1.54E-01	1.22E-02	2.03	1.11E-01	1.70
Campus Security	one (1) boiler	0.90	7.88	7.49E-03	3.00E-02	3.00E-02	2.37E-03	0.39	2.17E-02	0.33
Center for Fine Arts	one (1) boiler	4.185	36.66	3.48E-02	1.39E-01	1.39E-01	1.10E-02	1.83	1.01E-01	1.54
	one (1) kiln	0.475	4.16	3.95E-03	1.58E-02	1.58E-02	1.25E-03	0.21	1.14E-02	0.17
Donner Hall	one (1) boiler	2.836	24.84	2.36E-02	9.44E-02	9.44E-02	7.45E-03	1.24	6.83E-02	1.04
Duggan Library	two (2) boilers	7.28	63.77	6.06E-02	2.42E-01	2.42E-01	1.91E-02	3.19	1.75E-01	2.68
Kappa Alpha Theta	one (1) boiler	2.5426	22.27	2.12E-02	8.46E-02	8.46E-02	6.68E-03	1.11	6.13E-02	0.94
Katherine Parker	one (1) boiler	2.937	25.73	2.44E-02	9.78E-02	9.78E-02	7.72E-03	1.29	7.08E-02	1.08
Lynn Hall	one (1) boiler	4.185	36.66	3.48E-02	1.39E-01	1.39E-01	1.10E-02	1.83	1.01E-01	1.54
Parker Auditorium	one (1) boiler	3.357	29.41	2.79E-02	1.12E-01	1.12E-01	8.82E-03	1.47	8.09E-02	1.24
Wiley Hall	one (1) boiler	2.937	25.73	2.44E-02	9.78E-02	9.78E-02	7.72E-03	1.29	7.08E-02	1.08
Total		36.46	319.41	0.30	1.21	1.21	0.10	15.97	0.88	13.42

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

10⁶ scf = MMCF

Heating Value = 1000 MMBtu/10⁶ scf

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)

Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

Company Name: Hanover College
 Address: 359 LaGrange Road, Hanover, IN 47243
 Permit No.: M077-28878-00004
 Reviewer: Meredith W. Jones
 Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): Criteria Pollutants****
Units Constructed after September 21, 1983 (page 1 of 3)

	PM ¹	PM ₁₀ ¹	PM _{2.5}	SO ₂	NO _x ²	VOC	CO
Emission Factor (lbs/10 ⁶ scf)	1.9	7.6	7.6	0.6	100	5.5	84.0

¹PM emission factor is filterable PM only. PM₁₀ emission factor is filterable and condensable PM combined.

²Emission Factors for NO_x: Uncontrolled = 100; Low NO_x Burner = 50; Low NO_x Burners/Flue gas recirculation = 32.

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)						
				PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
Alpha Delta Pi	three (3) furnaces	0.36	3.15	3.00E-03	1.20E-02	1.20E-02	9.46E-04	0.16	8.67E-03	0.13
	two (2) water heaters	0.40	3.49	3.31E-03	1.32E-02	1.32E-02	1.05E-03	0.17	9.59E-03	0.15
Administration Building	one (1) boiler	1.50	13.14	1.25E-02	4.99E-02	4.99E-02	3.94E-03	0.66	3.61E-02	0.55
Ayres Stadium	one (1) furnace	0.06	0.53	4.99E-04	2.00E-03	2.00E-03	1.58E-04	0.03	1.45E-03	0.02
	one (1) water heater	0.199	1.74	1.66E-03	6.62E-03	6.62E-03	5.23E-04	0.09	4.79E-03	0.07
	one (1) clothes dryer	0.292	2.56	2.43E-03	9.72E-03	9.72E-03	7.67E-04	0.13	7.03E-03	0.11
Beta/Coulter House	two (2) boilers	0.80	7.01	6.66E-03	2.66E-02	2.66E-02	2.10E-03	0.35	1.93E-02	0.29
Blythe Hall	three (3) furnaces	0.36	3.15	3.00E-03	1.20E-02	1.20E-02	9.46E-04	0.16	8.67E-03	0.13
	one (1) water heater	0.199	1.74	1.66E-03	6.62E-03	6.62E-03	5.23E-04	0.09	4.79E-03	0.07
Brown Chapel	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
Campus Center	one (1) water heater	0.18	1.58	1.50E-03	5.99E-03	5.99E-03	4.73E-04	0.08	4.34E-03	0.07
Campus Center Kitchen	one (1) boiler	0.63	5.52	5.24E-03	2.10E-02	2.10E-02	1.66E-03	0.28	1.52E-02	0.23
	two (2) water heaters	0.72	6.31	5.99E-03	2.40E-02	2.40E-02	1.89E-03	0.32	1.73E-02	0.26
Child Care	two (2) furnaces	0.20	1.75	1.66E-03	6.66E-03	6.66E-03	5.26E-04	0.09	4.82E-03	0.07
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
Chi Omega	two (2) furnaces	0.24	2.10	2.00E-03	7.99E-03	7.99E-03	6.31E-04	0.11	5.78E-03	0.09
	two (2) water heaters	0.40	3.49	3.31E-03	1.32E-02	1.32E-02	1.05E-03	0.17	9.59E-03	0.15
Classic Hall	two (2) boilers	1.41	12.37	1.18E-02	4.70E-02	4.70E-02	3.71E-03	0.62	3.40E-02	0.52
Crowe Hall	two (2) boilers	1.50	13.14	1.25E-02	4.99E-02	4.99E-02	3.94E-03	0.66	3.61E-02	0.55
	two (2) water heaters	0.40	3.49	3.31E-03	1.32E-02	1.32E-02	1.05E-03	0.17	9.59E-03	0.15
Donner Hall	one (1) boiler	3.392	29.71	2.82E-02	1.13E-01	1.13E-01	8.91E-03	1.49	8.17E-02	1.25
	one (1) water heater	0.72	6.31	5.99E-03	2.40E-02	2.40E-02	1.89E-03	0.32	1.73E-02	0.26
File House	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
Greenwood Suites	one (1) furnace	0.96	8.41	7.99E-03	3.20E-02	3.20E-02	2.52E-03	0.42	2.31E-02	0.35
	one (1) water heater	0.56	4.91	4.66E-03	1.86E-02	1.86E-02	1.47E-03	0.25	1.35E-02	0.21
Hendricks Hall	two (2) boilers	0.06	0.53	4.99E-04	2.00E-03	2.00E-03	1.58E-04	0.03	1.45E-03	0.02
Horner Center	two (2) boilers	5.73	50.16	4.77E-02	1.91E-01	1.91E-01	1.50E-02	2.51	1.38E-01	2.11
	one (1) water heater	0.24	2.10	2.00E-03	7.99E-03	7.99E-03	6.31E-04	0.11	5.78E-03	0.09
	one (1) clothes dryer	0.146	1.28	1.22E-03	4.86E-03	4.86E-03	3.84E-04	0.06	3.52E-03	0.05
Jordan House	two (2) furnaces	0.24	2.10	2.00E-03	7.99E-03	7.99E-03	6.31E-04	0.11	5.78E-03	0.09
	two (2) water heaters	0.40	3.49	3.31E-03	1.32E-02	1.32E-02	1.05E-03	0.17	9.59E-03	0.15
Kappa Alpha Theta	one (1) furnace	0.105	0.92	8.74E-04	3.50E-03	3.50E-03	2.76E-04	0.05	2.53E-03	0.04
	one (1) water heater	0.72	6.31	5.99E-03	2.40E-02	2.40E-02	1.89E-03	0.32	1.73E-02	0.26
Total		23.33	204.40	0.19	0.78	0.78	0.06	10.22	0.56	8.58

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

10⁶ scf = MMCF

Heating Value = 1000 MMBtu/10⁶ scf

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)

Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

Company Name: Hanover College
 Address: 359 LaGrange Road, Hanover, IN 47243
 Permit No.: M077-28878-00004
 Reviewer: Meredith W. Jones
 Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): Criteria Pollutants****
Units Constructed prior to September 21, 1983 (page 2 of 3)

	PM ¹	PM ₁₀ ¹	PM _{2.5}	SO ₂	NOx ²	VOC	CO
Emission Factor (lbs/10 ⁶ scf)	1.9	7.6	7.6	0.6	100	5.5	84.0

¹PM emission factor is filterable PM only. PM₁₀ emission factor is filterable and condensable PM combined.

²Emission Factors for NOx: Uncontrolled = 100; Low NOx Burner = 50; Low NOx Burners/Flue gas recirculation = 32.

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)						
				PM	PM ₁₀	PM _{2.5}	SO ₂	NOx	VOC	CO
Katherine Parker	three (3) water heaters	0.47	4.10	3.89E-03	1.56E-02	1.56E-02	1.23E-03	0.20	1.13E-02	0.17
Lamda Chi	three (3) furnaces	0.36	3.15	3.00E-03	1.20E-02	1.20E-02	9.46E-04	0.16	8.67E-03	0.13
	two (2) water heaters	0.40	3.49	3.31E-03	1.32E-02	1.32E-02	1.05E-03	0.17	9.59E-03	0.15
Ogle Center	two (2) water heaters	1.50	13.14	1.25E-02	4.99E-02	4.99E-02	3.94E-03	0.66	3.61E-02	0.55
Phi Mu	three (3) furnaces	0.32	2.80	2.66E-03	1.07E-02	1.07E-02	8.41E-04	0.14	7.71E-03	0.12
	two (2) water heaters	0.40	3.49	3.31E-03	1.32E-02	1.32E-02	1.05E-03	0.17	9.59E-03	0.15
Presidents House	four (4) furnaces	0.54	4.69	4.45E-03	1.78E-02	1.78E-02	1.41E-03	0.23	1.29E-02	0.20
Science Center	two (2) boilers	12.00	105.12	9.99E-02	3.99E-01	3.99E-01	3.15E-02	5.26	2.89E-01	4.42
	two (2) water heaters	1.44	12.61	1.20E-02	4.79E-02	4.79E-02	3.78E-03	0.63	3.47E-02	0.53
Science Hall	one (1) boiler	2.50	21.90	2.08E-02	8.32E-02	8.32E-02	6.57E-03	1.10	6.02E-02	0.92
	five (5) furnaces	0.46	4.03	3.83E-03	1.53E-02	1.53E-02	1.21E-03	0.20	1.11E-02	0.17
Wiley Hall	one (1) water heater	0.72	6.31	5.99E-03	2.40E-02	2.40E-02	1.89E-03	0.32	1.73E-02	0.26
44 Clemmons	one (1) furnace	0.12	1.05	9.99E-04	3.99E-03	3.99E-03	3.15E-04	0.05	2.89E-03	0.04
52 Clemmons	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
	one (1) water heater	0.034	0.30	2.83E-04	1.13E-03	1.13E-03	8.94E-05	0.01	8.19E-04	0.01
60 Clemmons	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
124 Clemmons	one (1) furnace	0.12	1.05	9.99E-04	3.99E-03	3.99E-03	3.15E-04	0.05	2.89E-03	0.04
134 Clemmons	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
153 Clemmons	one (1) furnace	0.057	0.50	4.74E-04	1.90E-03	1.90E-03	1.50E-04	0.02	1.37E-03	0.02
	one (1) water heater	0.034	0.30	2.83E-04	1.13E-03	1.13E-03	8.94E-05	0.01	8.19E-04	0.01
163 Clemmons	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
164 Clemmons	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
175 Clemmons	one (1) furnace	0.12	1.05	9.99E-04	3.99E-03	3.99E-03	3.15E-04	0.05	2.89E-03	0.04
176 Clemmons	one (1) furnace	0.125	1.10	1.04E-03	4.16E-03	4.16E-03	3.29E-04	0.05	3.01E-03	0.05
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
215 Clemmons	one (1) furnace	0.11	0.96	9.15E-04	3.66E-03	3.66E-03	2.89E-04	0.05	2.65E-03	0.04
340 File Street	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
347 File Street	one (1) furnace	0.1	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
348 File Street	one (1) furnace	0.1	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
360 File Street	one (1) furnace	0.1	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
372 File Street	one (1) furnace	0.1	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
129 Fisher Street	one (1) furnace	0.115	1.01	9.57E-04	3.83E-03	3.83E-03	3.02E-04	0.05	2.77E-03	0.04
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
Total		22.95	201.08	0.19	0.76	0.76	0.06	10.05	0.55	8.45

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

10⁶ scf = MMCF

Heating Value = 1000 MMBtu/10⁶ scf

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)

Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

Company Name: Hanover College
Address: 359 LaGrange Road, Hanover, IN 47243
Permit No.: M077-28878-00004
Reviewer: Meredith W. Jones
Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): Criteria Pollutants****
Units Constructed prior to September 21, 1983 (page 3 of 3)

	PM ¹	PM ₁₀ ¹	PM _{2.5}	SO ₂	NO _x ²	VOC	CO
Emission Factor (lbs/10 ⁶ scf)	1.9	7.6	7.6	0.6	100	5.5	84.0

¹PM emission factor is filterable PM only. PM₁₀ emission factor is filterable and condensable PM combined.

²Emission Factors for NO_x: Uncontrolled = 100; Low NO_x Burner = 50; Low NO_x Burners/Flue gas recirculation = 32.

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)						
				PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
105 Garritt Street	one (1) furnace	0.15	1.31	1.25E-03	4.99E-03	4.99E-03	3.94E-04	0.07	3.61E-03	0.06
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
106 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
107 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
120 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
132 Garritt Street	one (1) furnace	0.12	1.05	9.99E-04	3.99E-03	3.99E-03	3.15E-04	0.05	2.89E-03	0.04
133 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
144 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
145 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.30	2.63	2.50E-03	9.99E-03	9.99E-03	7.88E-04	0.13	7.23E-03	0.11
146 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
156 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
157 Garritt Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
167 Garritt Street	one (1) furnace	0.12	1.05	9.99E-04	3.99E-03	3.99E-03	3.15E-04	0.05	2.89E-03	0.04
203 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.30	2.63	2.50E-03	9.99E-03	9.99E-03	7.88E-04	0.13	7.23E-03	0.11
221 Garritt Street	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
174 Greenwood Street	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
Madison Avenue Apartments 1-3	three (3) furnaces	0.15	1.31	1.25E-03	4.99E-03	4.99E-03	3.94E-04	0.07	3.61E-03	0.06
	three (3) water heaters	0.12	1.05	9.99E-04	3.99E-03	3.99E-03	3.15E-04	0.05	2.89E-03	0.04
318 Main Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
333 Prospect Street	one (1) furnace	0.125	1.10	1.04E-03	4.16E-03	4.16E-03	3.29E-04	0.05	3.01E-03	0.05
335 Prospect Street	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
85 Young Street	one (1) furnace	0.125	1.10	1.04E-03	4.16E-03	4.16E-03	3.29E-04	0.05	3.01E-03	0.05
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
87 Young Street	one (1) furnace	0.10	0.88	8.32E-04	3.33E-03	3.33E-03	2.63E-04	0.04	2.41E-03	0.04
	one (1) water heater	0.04	0.35	3.33E-04	1.33E-03	1.33E-03	1.05E-04	0.02	9.64E-04	0.01
95 Young Street	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
103 Young Street	one (1) furnace	0.08	0.70	6.66E-04	2.66E-03	2.66E-03	2.10E-04	0.04	1.93E-03	0.03
Total		3.19	27.94	0.03	0.11	0.11	0.01	1.40	0.08	1.17

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

10⁶ scf = MMCF

Heating Value = 1000 MMBtu/10⁶ scf

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)

Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

Company Name: Hanover College
 Address: 359 LaGrange Road, Hanover, IN 47243
 Permit No.: M077-28878-00004
 Reviewer: Meredith W. Jones
 Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): HAPs****
Units Constructed prior to September 21, 1983

	HAPs: Organics					HAPs: Metals				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor (lbs/10 ⁶ scf)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)									
				Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
Ayres Stadium	two (2) gas unit heaters	0.20	1.75	1.84E-06	1.05E-06	6.57E-05	1.58E-03	2.98E-06	4.38E-07	9.64E-07	1.23E-06	3.33E-07	1.84E-06
Campus Center	two (2) boilers	4.63	40.54	4.26E-05	2.43E-05	1.52E-03	3.65E-02	6.89E-05	1.01E-05	2.23E-05	2.84E-05	7.70E-06	4.26E-05
Campus Security	one (1) boiler	0.90	7.88	8.28E-06	4.73E-06	2.96E-04	7.10E-03	1.34E-05	1.97E-06	4.34E-06	5.52E-06	1.50E-06	8.28E-06
Center for Fine Arts	one (1) boiler	4.185	36.66	3.85E-05	2.20E-05	1.37E-03	3.30E-02	6.23E-05	9.17E-06	2.02E-05	2.57E-05	6.97E-06	3.85E-05
	one (1) kiln	0.475	4.16	4.37E-06	2.50E-06	1.56E-04	3.74E-03	7.07E-06	1.04E-06	2.29E-06	2.91E-06	7.91E-07	4.37E-06
Donner Hall	one (1) boiler	2.836	24.84	2.61E-05	1.49E-05	9.32E-04	2.24E-02	4.22E-05	6.21E-06	1.37E-05	1.74E-05	4.72E-06	2.61E-05
Duggan Library	two (2) boilers	7.28	63.77	6.70E-05	3.83E-05	2.39E-03	5.74E-02	1.08E-04	1.59E-05	3.51E-05	4.46E-05	1.21E-05	6.70E-05
Kappa Alpha Theta	one (1) boiler	2.5426	22.27	2.34E-05	1.34E-05	8.35E-04	2.00E-02	3.79E-05	5.57E-06	1.23E-05	1.56E-05	4.23E-06	2.34E-05
Katherine Parker	one (1) boiler	2.937	25.73	2.70E-05	1.54E-05	9.65E-04	2.32E-02	4.37E-05	6.43E-06	1.42E-05	1.80E-05	4.89E-06	2.70E-05
Lynn Hall	one (1) boiler	4.185	36.66	3.85E-05	2.20E-05	1.37E-03	3.30E-02	6.23E-05	9.17E-06	2.02E-05	2.57E-05	6.97E-06	3.85E-05
Parker Auditorium	one (1) boiler	3.357	29.41	3.09E-05	1.76E-05	1.10E-03	2.65E-02	5.00E-05	7.35E-06	1.62E-05	2.06E-05	5.59E-06	3.09E-05
Wiley Hall	one (1) boiler	2.937	25.73	2.70E-05	1.54E-05	9.65E-04	2.32E-02	4.37E-05	6.43E-06	1.42E-05	1.80E-05	4.89E-06	2.70E-05
Total		36.46	319.41	3.35E-04	1.92E-04	1.20E-02	2.87E-01	5.43E-04	7.99E-05	1.76E-04	2.24E-04	6.07E-05	3.35E-04

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

10⁶ scf = MMCF

Heating Value = 1000 MMBtu/10⁶ scf

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)

Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

The five highest of both organic and metal HAPs emission factors (from US EPA's AP 42, Chapter 1.4, Tables 1.4-2, 1.4-3, and 1.4-4) are provided; additional HAPs emission factors are available in AP 42, Chapter 1.4.

Total HAPs (tons/yr) = 0.30

Company Name: Hanover College
Address: 359 LaGrange Road, Hanover, IN 47243
Permit No.: M077-28878-00004
Reviewer: Meredith W. Jones
Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): HAPs****
Units Constructed prior to September 21, 1983 (page 1 of 3)

Emission Factor (lbs/10 ⁶ scf)	HAPs: Organics					HAPs: Metals				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)									
				Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
Alpha Delta Pi	three (3) furnaces	0.36	3.15	3.31E-06	1.89E-06	1.18E-04	2.84E-03	5.36E-06	7.88E-07	1.73E-06	2.21E-06	5.99E-07	3.31E-06
	two (2) water heaters	0.40	3.49	3.66E-06	2.09E-06	1.31E-04	3.14E-03	5.93E-06	8.72E-07	1.92E-06	2.44E-06	6.62E-07	3.66E-06
Administration Building	one (1) boiler	1.50	13.14	1.38E-05	7.88E-06	4.93E-04	1.18E-02	2.23E-05	3.29E-06	7.23E-06	9.20E-06	2.50E-06	1.38E-05
Ayres Stadium	one (1) furnace	0.06	0.53	5.52E-07	3.15E-07	1.97E-05	4.73E-04	8.94E-07	1.31E-07	2.89E-07	3.68E-07	9.99E-08	5.52E-07
	one (1) water heater	0.199	1.74	1.83E-06	1.05E-06	6.54E-05	1.57E-03	2.96E-06	4.36E-07	9.59E-07	1.22E-06	3.31E-07	1.83E-06
	one (1) clothes dryer	0.292	2.56	2.69E-06	1.53E-06	9.59E-05	2.30E-03	4.35E-06	6.39E-07	1.41E-06	1.79E-06	4.86E-07	2.69E-06
Beta/Coulter House	two (2) gas unit heaters	0.20	1.75	1.84E-06	1.05E-06	6.57E-05	1.58E-03	2.98E-06	4.38E-07	9.64E-07	1.23E-06	3.33E-07	1.84E-06
	two (2) boilers	0.80	7.01	7.36E-06	4.20E-06	2.63E-04	6.31E-03	1.19E-05	1.75E-06	3.85E-06	4.91E-06	1.33E-06	7.36E-06
Blythe Hall	three (3) furnaces	0.36	3.15	3.31E-06	1.89E-06	1.18E-04	2.84E-03	5.36E-06	7.88E-07	1.73E-06	2.21E-06	5.99E-07	3.31E-06
	one (1) water heater	0.199	1.74	1.83E-06	1.05E-06	6.54E-05	1.57E-03	2.96E-06	4.36E-07	9.59E-07	1.22E-06	3.31E-07	1.83E-06
Brown Chapel	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
Campus Center	one (1) water heater	0.18	1.58	1.66E-06	9.46E-07	5.91E-05	1.42E-03	2.68E-06	3.94E-07	8.67E-07	1.10E-06	3.00E-07	1.66E-06
Campus Center Kitchen	one (1) boiler	0.63	5.52	5.79E-06	3.31E-06	2.07E-04	4.97E-03	9.38E-06	1.38E-06	3.04E-06	3.86E-06	1.05E-06	5.79E-06
	two (2) water heaters	0.72	6.31	6.62E-06	3.78E-06	2.37E-04	5.68E-03	1.07E-05	1.58E-06	3.47E-06	4.42E-06	1.20E-06	6.62E-06
Child Care	two (2) furnaces	0.20	1.75	1.84E-06	1.05E-06	6.57E-05	1.58E-03	2.98E-06	4.38E-07	9.64E-07	1.23E-06	3.33E-07	1.84E-06
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
Chi Omega	two (2) furnaces	0.24	2.10	2.21E-06	1.26E-06	7.88E-05	1.89E-03	3.57E-06	5.26E-07	1.16E-06	1.47E-06	3.99E-07	2.21E-06
	two (2) water heaters	0.40	3.49	3.66E-06	2.09E-06	1.31E-04	3.14E-03	5.93E-06	8.72E-07	1.92E-06	2.44E-06	6.62E-07	3.66E-06
Classic Hall	two (2) boilers	1.41	12.37	1.30E-05	7.42E-06	4.64E-04	1.11E-02	2.10E-05	3.09E-06	6.80E-06	8.66E-06	2.35E-06	1.30E-05
	two (2) furnaces	1.50	13.14	1.38E-05	7.88E-06	4.93E-04	1.18E-02	2.23E-05	3.29E-06	7.23E-06	9.20E-06	2.50E-06	1.38E-05
Crowe Hall	two (2) water heaters	0.40	3.49	3.66E-06	2.09E-06	1.31E-04	3.14E-03	5.93E-06	8.72E-07	1.92E-06	2.44E-06	6.62E-07	3.66E-06
	one (1) boiler	3.392	29.71	3.12E-05	1.78E-05	1.11E-03	2.67E-02	5.05E-05	7.43E-06	1.63E-05	2.08E-05	5.65E-06	3.12E-05
Donner Hall	one (1) water heater	0.72	6.31	6.62E-06	3.78E-06	2.37E-04	5.68E-03	1.07E-05	1.58E-06	3.47E-06	4.42E-06	1.20E-06	6.62E-06
File House	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
Greenwood Suites	one (1) furnace	0.96	8.41	8.83E-06	5.05E-06	3.15E-04	7.57E-03	1.43E-05	2.10E-06	4.63E-06	5.89E-06	1.60E-06	8.83E-06
	one (1) water heater	0.56	4.91	5.15E-06	2.94E-06	1.84E-04	4.42E-03	8.34E-06	1.23E-06	2.70E-06	3.43E-06	9.32E-07	5.15E-06
Hendricks Hall	two (2) boilers	0.06	0.53	5.52E-07	3.15E-07	1.97E-05	4.73E-04	8.94E-07	1.31E-07	2.89E-07	3.68E-07	9.99E-08	5.52E-07
	two (2) furnaces	5.73	50.16	5.27E-05	3.01E-05	1.88E-03	4.51E-02	8.53E-05	1.25E-05	2.76E-05	3.51E-05	9.53E-06	5.27E-05
Horner Center	one (1) water heater	0.24	2.10	2.21E-06	1.26E-06	7.88E-05	1.89E-03	3.57E-06	5.26E-07	1.16E-06	1.47E-06	3.99E-07	2.21E-06
	one (1) clothes dryer	0.146	1.28	1.34E-06	7.67E-07	4.80E-05	1.15E-03	2.17E-06	3.20E-07	7.03E-07	8.95E-07	2.43E-07	1.34E-06
	two (2) furnaces	0.24	2.10	2.21E-06	1.26E-06	7.88E-05	1.89E-03	3.57E-06	5.26E-07	1.16E-06	1.47E-06	3.99E-07	2.21E-06
Jordan House	two (2) water heaters	0.40	3.49	3.66E-06	2.09E-06	1.31E-04	3.14E-03	5.93E-06	8.72E-07	1.92E-06	2.44E-06	6.62E-07	3.66E-06
	one (1) furnace	0.105	0.92	9.66E-07	5.52E-07	3.45E-05	8.28E-04	1.56E-06	2.30E-07	5.06E-07	6.44E-07	1.75E-07	9.66E-07
Kappa Alpha Theta	one (1) water heater	0.72	6.31	6.62E-06	3.78E-06	2.37E-04	5.68E-03	1.07E-05	1.58E-06	3.47E-06	4.42E-06	1.20E-06	6.62E-06
Total		23.53	206.15	2.16E-04	1.24E-04	7.73E-03	0.19	3.50E-04	5.15E-05	1.13E-04	1.44E-04	3.92E-05	2.16E-04

Total HAPs (tons/yr) = 0.19

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

10⁶ scf = MMCF

Heating Value = 1000 MMBtu/10⁶ scf

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)

Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

The five highest of both organic and metal HAPs emission factors (from US EPA's AP 42, Chapter 1.4, Tables 1.4-2, 1.4-3, and 1.4-4) are provided; additional HAPs emission factors are available in AP 42, Chapter 1.4.

Company Name: Hanover College
 Address: 359 LaGrange Road, Hanover, IN 47243
 Permit No.: M077-28878-00004
 Reviewer: Meredith W. Jones
 Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): HAPs****
Units Constructed prior to September 21, 1983 (page 2 of 3)

Emission Factor (lbs/10 ⁶ scf)	HAPs: Organics					HAPs: Metals				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)									
				Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
Katherine Parker	three (3) water heaters	0.47	4.10	4.30E-06	2.46E-06	1.54E-04	3.69E-03	6.97E-06	1.02E-06	2.25E-06	2.87E-06	7.79E-07	4.30E-06
Lamda Chi	three (3) furnaces	0.36	3.15	3.31E-06	1.89E-06	1.18E-04	2.84E-03	5.36E-06	7.88E-07	1.73E-06	2.21E-06	5.99E-07	3.31E-06
	two (2) water heaters	0.40	3.49	3.66E-06	2.09E-06	1.31E-04	3.14E-03	5.93E-06	8.72E-07	1.92E-06	2.44E-06	6.62E-07	3.66E-06
Ogle Center	two (2) water heaters	1.50	13.14	1.38E-05	7.88E-06	4.93E-04	1.18E-02	2.23E-05	3.29E-06	7.23E-06	9.20E-06	2.50E-06	1.38E-05
	three (3) furnaces	0.32	2.80	2.94E-06	1.68E-06	1.05E-04	2.52E-03	4.77E-06	7.01E-07	1.54E-06	1.96E-06	5.33E-07	2.94E-06
Phi Mu	two (2) water heaters	0.40	3.49	3.66E-06	2.09E-06	1.31E-04	3.14E-03	5.93E-06	8.72E-07	1.92E-06	2.44E-06	6.62E-07	3.66E-06
Presidents House	four (4) furnaces	0.54	4.69	4.92E-06	2.81E-06	1.76E-04	4.22E-03	7.97E-06	1.17E-06	2.58E-06	3.28E-06	8.90E-07	4.92E-06
	two (2) boilers	12.00	105.12	1.10E-04	6.31E-05	3.94E-03	9.46E-02	1.79E-04	2.63E-05	5.78E-05	7.36E-05	2.00E-05	1.10E-04
Science Center	two (2) water heaters	1.44	12.61	1.32E-05	7.57E-06	4.73E-04	1.14E-02	2.14E-05	3.15E-06	6.94E-06	8.83E-06	2.40E-06	1.32E-05
	one (1) boiler	2.50	21.90	2.30E-05	1.31E-05	8.21E-04	1.97E-02	3.72E-05	5.48E-06	1.20E-05	1.53E-05	4.16E-06	2.30E-05
Science Hall	five (5) furnaces	0.46	4.03	4.23E-06	2.42E-06	1.51E-04	3.63E-03	6.85E-06	1.01E-06	2.22E-06	2.82E-06	7.66E-07	4.23E-06
Wiley Hall	one (1) water heater	0.72	6.31	6.62E-06	3.78E-06	2.37E-04	5.68E-03	1.07E-05	1.58E-06	3.47E-06	4.42E-06	1.20E-06	6.62E-06
44 Clemmons	one (1) furnace	0.12	1.05	1.10E-06	6.31E-07	3.94E-05	9.46E-04	1.79E-06	2.63E-07	5.78E-07	7.36E-07	2.00E-07	1.10E-06
	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
52 Clemmons	one (1) water heater	0.034	0.30	3.13E-07	1.79E-07	1.12E-05	2.68E-04	5.06E-07	7.45E-08	1.64E-07	2.08E-07	5.66E-08	3.13E-07
60 Clemmons	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
124 Clemmons	one (1) furnace	0.12	1.05	1.10E-06	6.31E-07	3.94E-05	9.46E-04	1.79E-06	2.63E-07	5.78E-07	7.36E-07	2.00E-07	1.10E-06
134 Clemmons	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
	one (1) furnace	0.057	0.50	5.24E-07	3.00E-07	1.87E-05	4.49E-04	8.49E-07	1.25E-07	2.75E-07	3.50E-07	9.49E-08	5.24E-07
153 Clemmons	one (1) water heater	0.034	0.30	3.13E-07	1.79E-07	1.12E-05	2.68E-04	5.06E-07	7.45E-08	1.64E-07	2.08E-07	5.66E-08	3.13E-07
	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
164 Clemmons	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
175 Clemmons	one (1) furnace	0.12	1.05	1.10E-06	6.31E-07	3.94E-05	9.46E-04	1.79E-06	2.63E-07	5.78E-07	7.36E-07	2.00E-07	1.10E-06
	one (1) furnace	0.125	1.10	1.15E-06	6.57E-07	4.11E-05	9.86E-04	1.86E-06	2.74E-07	6.02E-07	7.67E-07	2.08E-07	1.15E-06
176 Clemmons	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
215 Clemmons	one (1) furnace	0.11	0.96	1.01E-06	5.78E-07	3.61E-05	8.67E-04	1.64E-06	2.41E-07	5.30E-07	6.75E-07	1.83E-07	1.01E-06
340 File Street	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
347 File Street	one (1) furnace	0.1	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
348 File Street	one (1) furnace	0.1	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
360 File Street	one (1) furnace	0.1	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
372 File Street	one (1) furnace	0.1	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
	one (1) furnace	0.115	1.01	1.06E-06	6.04E-07	3.78E-05	9.07E-04	1.71E-06	2.52E-07	5.54E-07	7.05E-07	1.91E-07	1.06E-06
129 Fisher Street	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
Total		22.95	201.08	2.11E-04	1.21E-04	7.54E-03	1.81E-01	3.42E-04	5.03E-05	1.11E-04	1.41E-04	3.82E-05	2.11E-04

Total HAPs (tons/yr) = 0.19

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

10⁶ scf = MMCF

Heating Value = 1000 MMBtu/10⁶ scf

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)

Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

The five highest of both organic and metal HAPs emission factors (from US EPA's AP 42, Chapter 1.4, Tables 1.4-2, 1.4-3, and 1.4-4) are provided; additional HAPs emission factors are available in AP 42, Chapter 1.4.

Company Name: Hanover College
 Address: 359 LaGrange Road, Hanover, IN 47243
 Permit No.: M077-28878-00004
 Reviewer: Meredith W. Jones
 Date: 3/9/10

****Natural Gas Combustion (MMBtu/Hr <100): HAPs****
Units Constructed prior to September 21, 1983 (page 3 of 3)

Emission Factor (lbs/10 ⁶ scf)	HAPs: Organics					HAPs: Metals				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03

Building	Emission Unit	Maximum Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential to Emit (tons/yr)									
				Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel
105 Garritt Street	one (1) furnace	0.15	1.31	1.38E-06	7.88E-07	4.93E-05	1.18E-03	2.23E-06	3.29E-07	7.23E-07	9.20E-07	2.50E-07	1.38E-06
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
106 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
107 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
120 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
132 Garritt Street	one (1) furnace	0.12	1.05	1.10E-06	6.31E-07	3.94E-05	9.46E-04	1.79E-06	2.63E-07	5.78E-07	7.36E-07	2.00E-07	1.10E-06
133 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
144 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
145 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.30	2.63	2.76E-06	1.58E-06	9.86E-05	2.37E-03	4.47E-06	6.57E-07	1.45E-06	1.84E-06	4.99E-07	2.76E-06
146 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
156 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
157 Garritt Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
167 Garritt Street	one (1) furnace	0.12	1.05	1.10E-06	6.31E-07	3.94E-05	9.46E-04	1.79E-06	2.63E-07	5.78E-07	7.36E-07	2.00E-07	1.10E-06
203 Garritt Street, Apartments 1 - 4	four (4) furnaces	0.30	2.63	2.76E-06	1.58E-06	9.86E-05	2.37E-03	4.47E-06	6.57E-07	1.45E-06	1.84E-06	4.99E-07	2.76E-06
221 Garritt Street	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
174 Greenwood Street	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
Madison Avenue Apartments 1-3	three (3) furnaces	0.15	1.31	1.38E-06	7.88E-07	4.93E-05	1.18E-03	2.23E-06	3.29E-07	7.23E-07	9.20E-07	2.50E-07	1.38E-06
	three (3) water heaters	0.12	1.05	1.10E-06	6.31E-07	3.94E-05	9.46E-04	1.79E-06	2.63E-07	5.78E-07	7.36E-07	2.00E-07	1.10E-06
318 Main Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
333 Prospect Street	one (1) furnace	0.125	1.10	1.15E-06	6.57E-07	4.11E-05	9.86E-04	1.86E-06	2.74E-07	6.02E-07	7.67E-07	2.08E-07	1.15E-06
335 Prospect Street	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
85 Young Street	one (1) furnace	0.125	1.10	1.15E-06	6.57E-07	4.11E-05	9.86E-04	1.86E-06	2.74E-07	6.02E-07	7.67E-07	2.08E-07	1.15E-06
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
87 Young Street	one (1) furnace	0.10	0.88	9.20E-07	5.26E-07	3.29E-05	7.88E-04	1.49E-06	2.19E-07	4.82E-07	6.13E-07	1.66E-07	9.20E-07
	one (1) water heater	0.04	0.35	3.68E-07	2.10E-07	1.31E-05	3.15E-04	5.96E-07	8.76E-08	1.93E-07	2.45E-07	6.66E-08	3.68E-07
95 Young Street	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
103 Young Street	one (1) furnace	0.08	0.70	7.36E-07	4.20E-07	2.63E-05	6.31E-04	1.19E-06	1.75E-07	3.85E-07	4.91E-07	1.33E-07	7.36E-07
Total		3.19	27.94	2.93E-05	1.68E-05	1.05E-03	2.51E-02	4.75E-05	6.99E-06	1.54E-05	1.96E-05	5.31E-06	2.93E-05

Methodology

All emission factors are based on normal firing.
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas
 10⁶ scf = MMCF
 Heating Value = 1000 MMBtu/10⁶ scf

Total HAPs (tons/yr) = 0.03

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) * (8760 hrs/yr) * (1 MMCF/1000 MMBtu)
 Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) * Emission Factor (lbs/10⁶ scf) * (1 ton/2000 lbs)

Emission Factors are from US EPA's AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2.

The five highest of both organic and metal HAPs emission factors (from US EPA's AP 42, Chapter 1.4, Tables 1.4-2, 1.4-3, and 1.4-4) are provided; additional HAPs emission factors are available in AP 42, Chapter 1.4.

Company Name: Hanover College
Address: 359 LaGrange Road, Hanover, IN 47243
Permit No.: M077-28878-00004
Reviewer: Meredith W. Jones
Date: 3/9/10

****Emergency Generator (Science Center)**
Reciprocating Engine (4 Stroke, Lean Burn)**

Heat Input Capacity (MMBtu/hr)	Operation Limit (hrs/yr)*
0.87	500

	Pollutant						
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
<i>Emission Factor (lb/MMBtu)</i>	9.91E-03	7.71E-05	7.71E-05	5.88E-04	4.08E+00	1.18E-01	3.17E-01
Potential Emissions (tons/yr)	2.16E-03	1.68E-05	1.68E-05	1.28E-04	0.89	2.57E-02	0.07

HAP	Emission Factor (lb/MMBtu)	Potential to Emit (tons/yr)
1,3-Butadiene	2.67E-04	5.81E-05
2,2,4-Trimethylpentane	2.50E-04	5.44E-05
Acetaldehyde	8.36E-03	1.82E-03
Acrolein	5.14E-03	1.12E-03
Benzene	4.40E-04	9.57E-05
Biphenyl	2.12E-04	4.61E-05
Formaldehyde	5.28E-02	1.15E-02
Methanol	2.50E-03	5.44E-04
n-Hexane	1.11E-03	2.42E-04
Toluene	4.08E-04	8.88E-05
Total HAPs		1.56E-02

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

Potential Emissions (tons/yr) = Heat Input Capacity (MMBtu/hr) * Emission Factor (lb/MMBtu) * (500 hr/yr) * (1 ton/2000 lbs)

The ten highest HAPs emission factors (from US EPA's AP 42, Chapter 3.2, Table 3.2-2) are provided; additional HAPs emission factors are available in AP 42, Chapter 3.2.

*As defined in the September 6, 1995 memorandum from John S. Seitz of US EPA on the subject of "Calculating Potential to Emit for Emergency Generators", an emergency generator's sole function is to provide back-up power when power from the local utility is interrupted. The only circumstances under which an emergency generator would operate when utility power is available are during operator training or brief maintenance checks. The generators' potential to emit is based on an operating time of 500 hours per year as set forth in the EPA memo.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Celeste M. Sutler
Hanover College
359 LaGrange Road POB 108
Hanover, Indiana 47243

DATE: June 17, 2010

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
MSOP
077-28878-00004

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
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Commissioner

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Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

June 17, 2010

TO: Madison Jefferson County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Hanover College
Permit Number: 077-28878-00004

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
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Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
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TO: Interested Parties / Applicant

DATE: June 17, 2010

RE: Hanover College / 077-28878-00004

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

In order to conserve paper and reduce postage costs, IDEM's Office of Air Quality is now sending many permit decisions on CDs in Adobe PDF format. The enclosed CD contains information regarding the company named above.

This permit is also available on the IDEM website at:
<http://www.in.gov/ai/appfiles/idem-caats/>

If you would like to request a paper copy of the permit document, please contact IDEM's central file room at:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

Please Note: *If you feel you have received this information in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV.*

Enclosures
CD Memo.dot 11/14/08

Mail Code 61-53

IDEM Staff	CDENNY 6/17/2010 Hanover College 077-28878-00004 (final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Celeste M Sutter Hanover College 359 LaGrange Rd, PO Box 108 Hanover IN 47243 (Source CAATS)										
2		J Michael Bruce VP - Business Affairs Hanover College PO Box 108 Hanover IN 47243 (RO CAATS)										
3		Jefferson County Health Department 715 Green Rd Madison IN 47250-2143 (Health Department)										
4		Madison Jefferson Co Public Library 420 W Main St Madison IN 47250-3796 (Library)										
5		Hanover Town Council PO Box 288, 11 Madison Avenue Hanover IN 47243 (Local Official)										
6		Jefferson County Commissioners & Planning Board 300 E Main Street Madison IN 47250 (Local Official)										
7		Mr. Guinn P Doyle Barnes & Thornburg, LLP 11 S Meridian St Indianapolis IN 46204 (Attorney)										
8		Minnie J. Schwarm Trust, Irwin Union Bank Trustee P.O. Box 929 Columbus IN 47202 (Affected Party)										
9		Timmy & Teresa A. Kidwell 617 Taylor Farm Road Bedford KY 40006 (Affected Party)										
10		David L. & Beverly A. Moore 617 Taylor Farm Road Bedford KY 40006 (Affected Party)										
11		Kenneth & Sherrin Kraus 2154 S. River Bottom Road Hanover IN 47243 (Affected Party)										
12		Judith A. Larr 216 Clemmons St. Hanover IN 47243 (Affected Party)										
13		Liters of Indiana, Inc. 5918 Haunz Lane Louisville KY 40241 (Affected Party)										
14		Donald Lynch & Stanley Gary 1315 Clifty Drive Madison IN 47250 (Affected Party)										
15		Keith Mahoney 317 E Main Street Hanover IN 47243 (Affected Party)										

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
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1		Mainstreet Investments, Inc. 402 West Main Street Madison IN 47250 (Affected Party)										
2		R. Scott & Lynn Ann Maricle Box 63 Hanover IN 47243 (Affected Party)										
3		William D & Louise M. Markel 268 Garritt St Hanover IN 47243 (Affected Party)										
4		Stephen K. & Kathy C. McKown 1292 S. Riverview Drive Hanover IN 47243 (Affected Party)										
5		C. Eugene & Janet R. McLemore Box 494 Hanover IN 47243 (Affected Party)										
6		Dean & Janis Miller 4101 W SR 56 Hanover IN 47243 (Affected Party)										
7		Kenneth Montgomery 700 S. Riverview Drive Hanover IN 47243 (Affected Party)										
8		Claude & Sandra Phillips 4136 W. SR 56 Hanover IN 47243 (Affected Party)										
9		PLP Properties 220 Rockwood Blvd Madison IN 47250 (Affected Party)										
10		Kenneth P. Prince P.O. Box 768 Hanover IN 47243 (Affected Party)										
11		Public Service Indiana 1000 E Main Street Plainfield IN 46168 (Affected Party)										
12		Claude O. & Rebecca S. Routon P.O. Box 886 Hanover IN 47243 (Affected Party)										
13		Dan, Mary, Don F. & Juanita Royalty 3925 W SR 56 Hanover IN 47243 (Affected Party)										
14		Eduardo Santa Cruz 313 Garritt St Hanover IN 47243 (Affected Party)										
15		Don Schmidt Schmidt Development Co. P.O. Box 224 Columbus IN 47202 (Affected Party)										

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1		Richard & Wanda 101 Madison Ave Hanover IN 47243 (Affected Party)										
2		Margaret Seifert 254 Garritt St Hanover IN 47243 (Affected Party)										
3		Danny & Treva Shelton 301 Garritt St Hanover IN 47243 (Affected Party)										
4		Sidnay, Inc., A KY Corp 10407 Taylorsville Road Louisville KY 40299 (Affected Party)										
5		Jan A. Smucker 332 File St Hanover IN 47243 (Affected Party)										
6		John & Hunter R. Stillhammer Box 572 Hanover IN 47243 (Affected Party)										
7		John David & Robertine Stoner 4146 W SR 56 Hanover IN 47243 (Affected Party)										
8		Robert Hicks Tau Chapter House Corp One American Square, Suite 2000 Indianapolis IN 46282 (Affected Party)										
9		Mark D. & Nancy D. Totten P.O. Box 255 Hanover IN 47243 (Affected Party)										
10		Stan & Susan M. Totten Trust P.O. Box 225 Hanover IN 47243 (Affected Party)										
11		Robert G. & Barbara G. Trimble P.O. Box 435 Hanover IN 47243 (Affected Party)										
12		Thomas & Ellen Altermatt 244 Garritt St. Hanover IN 47243 (Affected Party)										
13		Sherry Ashley 250 N. Madison Ave Hanover IN 47243 (Affected Party)										
14		Association Phi Delta Theata Hanover Chapter House P.O. Box 131 Patriot IN 47308 (Affected Party)										
15		Letecia Bajuyo 269 Garritt St Hanover IN 47243 (Affected Party)										

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1		Earl E. Bennett & Daniel 216 Delmar Drive Richmond KY 40475 (Affected Party)										
2		Richard T. & Delores L. Bird 320 E. LaGrange Road Hanover IN 47243 (Affected Party)										
3		Paul & Patricia Blume 141 Fisher St Hanover IN 47243 (Affected Party)										
4		Steve Boone & Anne Kirland 245 Garritt St Hanove IN 47243 (Affected Party)										
5		Michael K. & Lela J. Bradshaw 276 Garritt St Hanover IN 47243 (Affected Party)										
6		Norman L. & Ann S. Brameier 1857 S. River Bottom Rd Hanover IN 47243 (Affected Party)										
7		Dottie S. Burress 149 File St. Hanover IN 47243 (Affected Party)										
8		Roy G. & Beverly Carter 230 Madison Ave Hanover IN 47243 (Affected Party)										
9		James H. & Linda M. Caudill 4076 W SR 56 Hanover IN 47243 (Affected Party)										
10		Ronald Chandler 47 Rose Allen Way Madison IN 47250 (Affected Party)										
11		Richard G. & Nancy A. Clem 3894 W SR 56 Hanover IN 47243 (Affected Party)										
12		Jason Cline 1322 Riverview Dr Hanover IN 47243 (Affected Party)										
13		Coles Living Trust 1352 S. Riverview Drive Hanover IN 47243 (Affected Party)										
14		Jay Coles & Kathryn Prochoroff P.O. Box 368 Hanover IN 47243 (Affected Party)										
15		Creative Foundations P.O. Box 38 Canaan IN 47224 (Affected Party)										

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1		Alene O. 938 Walnut St Hanover IN 47243 (Affected Party)										
2		William L. & Betty K. Demaree 119 W Third Street Madison IN 47250 (Affected Party)										
3		Leslie Eisan 235 Garritt St Hanover IN 47243 (Affected Party)										
4		Roy H. Emery 1362 S. Riverview Dr Hanover IN 47243 (Affected Party)										
5		Robert C. & Brenda S. Evans P.O. Box 245 Hanover IN 47243 (Affected Party)										
6		Tom Evans & Barbara Farrar 618 Fisher St Hanover IN 47243 (Affected Party)										
7		James Ferguson Trust 178 Madison Ave Hanover IN 47243 (Affected Party)										
8		Jim, Brenda, Clem, Richard & Nancy Finnegan 545 E. 525 N Madison IN 47250 (Affected Party)										
9		Michael & Barbara Garvey 206 Garritt St Hanover IN 47243 (Affected Party)										
10		James Roy Green & Janet Washburn 516 N. Park Drive Franklin IN 47131 (Affected Party)										
11		Hanover Presbyterian Church P.O. Box 276 Hanover IN 47243 (Affected Party)										
12		Richard T. & Anne S. Haskins 4025 W SR 56 Hanover IN 47243 (Affected Party)										
13		Ruth Heck 110 Clemmons St Hanover IN 47243 (Affected Party)										
14		Helen Kreeger & Pauline Hensler P.O. Box 885 Hanover IN 47243 (Affected Party)										
15		Indiana-Kentucky Electric Corp ATTN: Treasurer P.O. Box 468 Piketon OH 45661 (Affected Party)										

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1		Indiana Telephone Corp. ATTN: Tax Department P.O. Box 152206 Irving TX 75015 (Affected Party)									
2		Betty J. Trinkle P.O. Box 200 Hanover IN 47243 (Affected Party)									
3		Henry VanLeeuwen 234 Garritt St Hanover IN 47243 (Affected Party)									
4		J. Dan & Juanita Webster P.O. Box 292 Hanover IN 47243 (Affected Party)									
5		Kelly M. Wehner 113 Madison Ave Hanover IN 47243 (Affected Party)									
6		Deborah Whistler 257 Garritt St Hanover IN 47243 (Affected Party)									
7		Marvin J. & Carolyn Wilburn 338 LaGrange Road Hanover IN 47243 (Affected Party)									
8		Robert A. Youngblood III 135 Madison Ave Hanover IN 47243 (Affected Party)									
9											
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14											
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