



*Mitchell E. Daniels, Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
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(317) 232-8603  
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TO: Interested Parties / Applicant  
DATE: February 1, 2008  
RE: Burkes Garden Wood Products / 167-25148-00144  
FROM: Matthew Stuckey, Deputy 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



Mitchell E. Daniels, Jr.  
Governor

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100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
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# New Source Construction and Federally Enforceable State Operating Permit OFFICE OF AIR QUALITY AND VIGO COUNTY AIR POLLUTION CONTROL

**Burkes Garden Wood Products  
1400 E. Polymer Drive  
Terre Haute, Indiana 47802**

(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.

**The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.**

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

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 FESOP under 326 IAC 2-8.

Operation Permit No.: F167-25148-00144	
Issued by:  Mathew Stuckey, Deputy Branch chief Permits Branch Office of Air Quality	Issuance Date: February 1, 2008  Expiration Date: February 1, 2013

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## SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and Vigo County Air Pollution Control (VCAPC). The information describing the source contained in conditions A.1 through A.3 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 2-8-3(b)]

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The Permittee owns and operates a stationary manufacturing plant for production of heat-treated lumber.

Source Address:	1400 E. Polymer Drive, Terre Haute, Indiana 47802
Mailing Address:	1400 E. Polymer Drive, Terre Haute, Indiana 47802
General Source Phone Number:	812-299-0464
SIC Code:	2499
County Location:	Vigo
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

- (a) One (1) No. 2 fuel oil-fired boiler, approved for construction in 2008, identified as B1, with a maximum heat input capacity of 19.40 MMBtu/hr, using no control, providing steam to help modulate the temperature and moisture conditions in the kilns, and exhausting to stack S01. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B1 is considered an affected source.
- (b) One (1) wood waste-fired boiler, approved for construction in 2008, identified as B2, with a maximum heat input capacity of 15.00 MMBtu/hr, equipped with multiclones for control of particulate matter and exhausting to stack S02. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B2 is considered an affected source.
- (c) Five (5) Stellac wood treating kilns, approved for construction in 2008, identified as K1 through K5, respectively, each with a maximum capacity of 33.07 tons of wood per batch, with VOC and HAP emissions controlled by using the kiln exhaust gas as combustion air for boilers B1 and/or B2, and exhausting to either stack S01 and/or S02.
- (d) One (1) No. 2 distillate oil storage tank, approved for construction in 2008, identified as Tank, with a maximum volume of 15,000 gallons.

### A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

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This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21).

### A.4 FESOP Applicability [326 IAC 2-8-2]

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This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP).

## **SECTION B GENERAL CONDITIONS**

### **B.1 Definitions [326 IAC 2-8-1]**

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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 2-7) shall prevail.

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

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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][326 IAC 2-8]**

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This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 and [326 IAC 2-8] when prior to the start of operation, 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 proposed in the application or the permit. The emission units covered in this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin 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 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]**

- 
- (a) This permit, F167-25148-00144, 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 and VCAPC, 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]**

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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 [326 IAC 2-8-6]**

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

**B.7 Severability [326 IAC 2-8-4(4)]**

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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 [326 IAC 2-8-4(5)(D)]**

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

**B.9 Duty to Provide Information [326 IAC 2-8-4(5)(E)]**

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- (a) The Permittee shall furnish to IDEM, OAQ and VCAPC, within a reasonable time, any information that IDEM, OAQ and VCAPC 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. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ and VCAPC 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 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]**

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- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

**B.11 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]**

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- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

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

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

- (b) The annual compliance certification report 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 and VCAPC, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
- (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether compliance was continuous or intermittent;
  - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
  - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ and VCAPC may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**B.12 Compliance Order Issuance [326 IAC 2-8-5(b)]**

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IDEM, OAQ and VCAPC may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

**B.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]**

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- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, 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 Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ and VCAPC upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ and VCAPC. IDEM, OAQ and VCAPC 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 or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (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.14 Emergency Provisions [326 IAC 2-8-12]

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- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
  - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
  - (2) The permitted facility was at the time being properly operated;
  - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
  - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and VCAPC within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality,

Compliance Section), or  
Telephone Number: 317-233-0178 (ask for Compliance Section)  
Facsimile Number: 317-233-6865  
Vigo County Air Pollution Control phone: (812) 462-3433; fax: (812) 462-3447

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

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

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
  - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
  - (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ and VCAPC may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
  - (f) Failure to notify IDEM, OAQ and VCAPC by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
  - (g) Operations may continue during an emergency only if the following conditions are met:

- (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
- (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
  - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
  - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

**B.15 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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- (a) All terms and conditions of permits established prior to F167-25148-00144 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.16 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]**

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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 nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

**B.17 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]**

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- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

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

and

Vigo County Air Pollution Control  
103 South Third Street

Terre Haute, Indiana 47807

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

**B.18 Permit Modification, Reopening, Revocation and Reissuance, or Termination**  
[326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

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- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ and VCAPC determines any of the following:
  - (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]
- (c) Proceedings by IDEM, OAQ and VCAPC to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ and VCAPC at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ and VCAPC may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

**B.19 Permit Renewal [326 IAC 2-8-3(h)]**

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- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and VCAPC and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification 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  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

- (b) A timely renewal application is one that is:
- (1) Submitted at least nine (9) months 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 and VCAPC 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 2-8 until IDEM, OAQ and VCAPC 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 in writing by IDEM, OAQ and VCAPC any additional information identified as being needed to process the application.

B.20 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 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  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.21 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
- (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
- (4) The Permittee notifies the:

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

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ and VCAPC in the notices specified in 326 IAC 2-8-15(b)(2), (c)(1), and (d).

(b) **Emission Trades [326 IAC 2-8-15(c)]**  
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).

(c) **Alternative Operating Scenarios [326 IAC 2-8-15(d)]**  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.

- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

**B.22 Source Modification Requirement [326 IAC 2-8-11.1]**

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A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

**B.23 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]**

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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, and VCAPC or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP 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.24 Transfer of Ownership or Operational Control [326 IAC 2-8-10]**

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- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 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  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

The application which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.25 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ and VCAPC within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ and VCAPC the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) 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.26 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [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 2-8-4(1)]

#### C.1 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

- (a) Pursuant to 326 IAC 2-8:
- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
  - (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
  - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (b) The potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.
- (c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.
- (d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

#### C.2 Opacity [326 IAC 5-1]

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 thirty 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.3 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.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

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The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

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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.6 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

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Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on November 12, 2007. The plan is included as Attachment A.

C.7 Stack Height [326 IAC 1-7]

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The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.8 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  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue

MC 61-52 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

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. The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (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 Accredited 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 Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

### **Testing Requirements [326 IAC 2-8-4(3)]**

#### **C.9 Performance Testing [326 IAC 3-6]**

---

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

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

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ and VCAPC not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ and VCAPC 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.10 Compliance Requirements [326 IAC 2-1.1-11]**

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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 2-8-4][326 IAC 2-8-5(a)(1)]**

#### **C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]**

---

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

**C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]**

---

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

**C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]**

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- (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 [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]**

**C.14 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]**

---

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

**C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]**

---

- (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 take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ and VCAPC, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) 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.

The response action documents submitted pursuant to this condition do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

**C.16 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]**

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- (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 or VCAPC makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or VCAPC within a reasonable time.

- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.17 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

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

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

- (c) 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 and VCAPC on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) The first report shall cover the period commencing on the date of issuance of this permit 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.

## **Stratospheric Ozone Protection**

### **C.18 Compliance with 40 CFR 82 and 326 IAC 22-1**

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Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) One (1) No. 2 fuel oil-fired boiler, approved for construction in 2008, identified as B1, with a maximum heat input capacity of 19.40 MMBtu/hr, using no control, providing steam to help modulate the temperature and moisture conditions in the kilns, and exhausting to stack S01. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B1 is considered an affected source.
- (b) One (1) wood waste-fired boiler, approved for construction in 2008, identified as B2, with a maximum heat input capacity of 15.00 MMBtu/hr, equipped with multiclones for control of particulate matter and exhausting to stack S02. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B2 is considered an affected source.
- (c) Five (5) Stellac wood treating kilns, approved for construction in 2008, identified as K1 through K5, respectively, each with a maximum capacity of 33.07 tons of wood per batch, with VOC and HAP emissions controlled by boilers B1 and/or B2, and exhausting to either stack S01 and/or S02.

(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 2-8-4(1)]

#### D.1.1 New Facilities, General Reduction Requirements [326 IAC 8-1-6] [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), the Permittee shall control the VOC emissions from each of the wood treating kilns (K1 through K5) using the Best Available Control Technology (BACT), which has been determined to be the following:

- (a) The VOC emissions from each of the wood treating kilns (K1 through K5) shall be controlled by boiler B1 and/or boiler B2.
- (b) The overall VOC control efficiency for each of the boilers (B1 and B2) (including the capture efficiency and destruction efficiency) shall be at least 99%.
- (c) The VOC emissions after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.384 pounds of VOC per ton of wood input to each kiln.

Compliance with these limits, combined with the potential to emit VOC from the other emission units at the source, shall limit the total potential to emit VOC from the entire source to less than 100 tons VOC per twelve (12) consecutive month period and render 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-7 (Part 70 permits) not applicable.

#### D.1.2 Hazardous Air Pollutants (HAP) [326 IAC 2-8-4]

In order to render the requirements of 326 IAC 2-7 (Part 70 Permits), the Permittee shall comply with the following:

- (a) The HAP emissions from each of the wood treating kilns (K1 through K5) shall be controlled by boiler B1 and/or boiler B2.
- (b) The emissions of Toluene after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.328 pounds per ton of wood input to each kiln.
- (c) The emission of combined HAPs after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.745 pounds per ton of wood input to each kiln.

Compliance with these limits, combined with the potential to emit HAPs from the other emission units at the source, shall limit the total potential to emit from the entire source to less than 10 tons of each single HAP per twelve (12) consecutive month period, and less than 25 tons of combined HAPs per twelve (12) consecutive month period and render 326 IAC 2-7 (Part 70 permits) not applicable.

### **Emission Limitations and Standards [326 IAC 2-7-5(1)]**

#### **D.1.3 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]**

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating: Emission limitations for facilities specified in 326 IAC 6-2-1(d)), the PM emissions from boilers B1, and B2 shall each not exceed 0.43 pounds per million Btu heat input (lb/MMBtu). This limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}} \quad \text{Where } Q = \text{total source operation capacity (MMBtu/hr)} \\ = (19.4+15 = 34.4 \text{ MMBtu/hr})$$

#### **D.1.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for boilers B1 and B2 and wood treating kilns K1 through K5.

### **Compliance Determination Requirements**

#### **D.1.5 Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP) [326 IAC 8-1-2] [326 IAC 2-8-4] [326 IAC 2-3]**

In order to comply with Conditions D.1.1 and D.1.2:

- (a) VOC and HAP emissions from the wood treating kilns K1 through K5 shall be controlled by boiler B1 and/or boiler B2.
- (b) The Permittee shall operate the boiler B1 and/or boiler B2 and control emissions from wood treating kilns K1 through K5 at all times that one or more of the wood treating kilns K1 through K5 are in operation and venting to the boiler B1 and/or boiler B2.

#### **D.1.6 Testing Requirements [326 IAC 3-6] [326 IAC 2-8-5(1), (4)] [326 IAC 2-1.1-11]**

In order to demonstrate compliance with Conditions D.1.1 and D.1.2, the Permittee shall perform VOC and Toluene testing on either boiler B1 or B2, when one or more of the wood treating kiln is operating, within 60 days after achieving the maximum capacity of the kilns, but no later than one hundred eighty (180) days after issuance of this permit, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

### **Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(5)(1)]**

#### **D.1.7 Visible Emissions Notations**

- (a) Visible emission notations of the boiler B1 and boiler B2 stack exhausts shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedences. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedences, shall be considered a deviation of this permit.

#### D.1.8 Boiler Temperature

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- (a) A continuous monitoring system shall be calibrated, maintained, and operated for each of the boilers B1 and B2 for measuring the operating combustion zone temperature. For the purpose of this condition, continuous means no less often than once per minute. The output of this system shall be recorded as 3-hour average. From the date of startup until the approved stack test results are available, the Permittee shall operate the boilers B1 and B2 at or above the 3-hour average combustion zone temperature of 1,400°F.
- (b) The Permittee shall determine the 3-hour average combustion zone temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.1.1 and D.1.2, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate the boilers B1 and B2 at or above the 3-hour average combustion zone temperature as observed during the compliant stack test.

#### D.1.9 Parametric Monitoring

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- (a) The Permittee shall determine the appropriate duct pressure or fan amperage of the system capturing emissions from each of the wood treating kilns from the most recent valid stack test that demonstrates compliance with Conditions D.1.1 and D.1.2, as approved by IDEM.
- (b) The duct pressure or fan amperage shall be observed at least once per day when the wood treating kilns are in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliance stack test.

### **Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

#### D.1.10 Record Keeping Requirements

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- (a) In order to document compliance with Condition D.1.7, the Permittee shall maintain records of visible emission notations of the boiler B1 and B2 stack exhausts once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the boiler did not operate that day).
- (b) To document compliance with Conditions D.1.1, D.1.2, D.1.8, and D.1.9, the Permittee shall maintain records in accordance with (1) through (2) below for boilers B1 and B2:
  - (1) The continuous temperature records for the operating combustion zone temperature and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

- (2) Daily records of the duct pressure or fan amperage of the system capturing emissions from each of the wood treating kilns and the duct pressure or fan amperage that demonstrates compliance during the most recent compliant stack test.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**SECTION E.1 NSPS 40 CFR Part 60, Subpart Dc – New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating units.**

**Emissions Unit Description:**

- (a) One (1) No. 2 fuel oil-fired boiler, approved for construction in 2008, identified as B1, with a maximum heat input capacity of 19.40 MMBtu/hr, using no control, providing steam to help modulate the temperature and moisture conditions in the kilns, and exhausting to stack S01. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B1 is considered an affected source.
- (b) One (1) wood waste-fired boiler, approved for construction in 2008, identified as B2, with a maximum heat input capacity of 15.00 MMBtu/hr, equipped with multiclones for control of particulate matter and exhausting to stack S02. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B2 is considered an affected source.

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

**E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]**

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for boilers B1 and B2 except as otherwise specified in 40 CFR Part 60, Subpart Dc.

- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

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

and

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, Indiana 47807

**E.1.2 (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) [40 CFR Part 60, Subpart Dc] [326 IAC 12-1]**

Pursuant to 40 CFR Part 60, Subpart Dc, the Permittee shall comply with the provisions of Standard of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, for boilers B1 and B2 as follows:

## **Subpart Dc —Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

### **§ 60.40c Applicability and delegation of authority.**

(a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units which meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO<sub>2</sub>) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under §60.14.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996; 71 FR 9884, Feb. 27, 2006]

### **§ 60.41c Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

*Annual capacity factor* means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

*Coal* means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388–77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

*Coal refuse* means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

*Cogeneration steam generating unit* means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

*Combined cycle system* means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

*Combustion research* means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to

the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

*Conventional technology* means wet flue gas desulphurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, “Standard Specification for Fuel Oils” (incorporated by reference—see §60.17).

*Dry flue gas desulfurization technology* means a sulfur dioxide (SO<sub>2</sub>) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

*Duct burner* means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

*Emerging technology* means any SO<sub>2</sub> control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under §60.48c(a)(4).

*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

*Fluidized bed combustion technology* means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

*Fuel pretreatment* means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

*Heat input* means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

*Heat transfer medium* means any material that is used to transfer heat from one point to another point.

*Maximum design heat input capacity* means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

*Natural gas* means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835–86, 87, 91, or 97, “Standard Specification for Liquefied Petroleum Gases” (incorporated by reference—see §60.17).

*Noncontinental area* means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

*Oil* means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

*Potential sulfur dioxide emission rate* means the theoretical SO<sub>2</sub> emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

*Process heater* means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

*Residual oil* means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, “Standard Specification for Fuel Oils” (incorporated by reference—see §60.17).

*Steam generating unit* means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

*Steam generating unit operating day* means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

*Wet flue gas desulfurization technology* means an SO<sub>2</sub> control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

*Wet scrubber system* means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or SO<sub>2</sub>.

*Wood* means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996; 65 FR 61752, Oct. 17, 2000; 71 FR 9884, Feb. 27, 2006]

#### **§ 60.42c Standard for sulfur dioxide.**

(d) On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), or (3) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under §60.48c(f)(1), (2), or (3), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(3) Coal-fired facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(i) The SO<sub>2</sub> emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9884, Feb. 27, 2006]

#### **§ 60.43c Standard for particulate matter.**

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9885, Feb. 27, 2006]

#### **§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.**

(a) Except as provided in paragraphs (g) and (h) of this section and in §60.8(b), performance tests required under §60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in §60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under §60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under §60.46c(d)(2).

(h) For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under §60.48c(f)(1), (2), or (3), as applicable.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

#### **§ 60.45c Compliance and performance test methods and procedures for particulate matter.**

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under §60.43c shall conduct an initial performance test as required under §60.8, and shall conduct subsequent

performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) and (d) of this section.

- (1) Method 1 shall be used to select the sampling site and the number of traverse sampling points.
- (2) Method 3 shall be used for gas analysis when applying Method 5, Method 5B, or Method 17.
- (3) Method 5, Method 5B, or Method 17 shall be used to measure the concentration of PM as follows:
  - (i) Method 5 may be used only at affected facilities without wet scrubber systems.
  - (ii) Method 17 may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B may be used in Method 17 only if Method 17 is used in conjunction with a wet scrubber system. Method 17 shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.
  - (iii) Method 5B may be used in conjunction with a wet scrubber system.
- (4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.
- (5) For Method 5 or Method 5B, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at  $160 \pm 14$  °C ( $320 \pm 25$  °F).
- (6) For determination of PM emissions, an oxygen or carbon dioxide measurement shall be obtained simultaneously with each run of Method 5, Method 5B, or Method 17 by traversing the duct at the same sampling location.
- (7) For each run using Method 5, Method 5B, or Method 17, the emission rates expressed in ng/J (lb/million Btu) heat input shall be determined using:
  - (i) The oxygen or carbon dioxide measurements and PM measurements obtained under this section,
  - (ii) The dry basis F-factor, and
  - (iii) The dry basis emission rate calculation procedure contained in Method 19 (appendix A).
- (8) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.
- (c) Units that burn only oil containing no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required to conduct emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9885, Feb. 27, 2006]

#### **§ 60.46c Emission monitoring for sulfur dioxide**

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO<sub>2</sub> emission limits under §60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO<sub>2</sub> concentrations and either oxygen or carbon dioxide concentrations at the outlet of the SO<sub>2</sub> control device (or the outlet of the steam generating unit if no SO<sub>2</sub> control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent

reduction requirements under §60.42c shall measure SO<sub>2</sub> concentrations and either oxygen or carbon dioxide concentrations at both the inlet and outlet of the SO<sub>2</sub> control device.

(d) As an alternative to operating a CEMS at the inlet to the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by using Method 6B. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according to Method 19. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average SO<sub>2</sub> input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B may be used in lieu of CEMS to measure SO<sub>2</sub> at the inlet or outlet of the SO<sub>2</sub> control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test shall consist of three paired runs of a suitable SO<sub>2</sub> and carbon dioxide measurement train operated at the candidate location and a second similar train operated according to the procedures in §3.2 and the applicable procedures in section 7 of Performance Specification 2 (appendix B). Method 6B, Method 6A, or a combination of Methods 6 and 3 or Methods 6C and 3A are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, as described under §60.48c(f) (1), (2), or (3), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

#### **§ 60.47c Emission monitoring for particulate matter.**

(c) Units that burn only oil that contains no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required

to conduct PM emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9886, Feb. 27, 2006]

**§ 60.48c Reporting and recordkeeping requirements.**

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(b) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits of §60.42c, or the PM or opacity limits of §60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B.

(c) The owner or operator of each coal-fired, oil-fired, or wood-fired affected facility subject to the opacity limits under §60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period.

(d) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall submit reports to the Administrator.

(e) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.43c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO<sub>2</sub> emission rate (nj/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO<sub>2</sub> emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO<sub>2</sub> or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier; and

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The owner or operator of an affected facility that only burns very low sulfur fuel oil or other liquid or gaseous fuels with potential sulfur dioxide emissions rate of 140 ng/J (0.32 lb/MMBtu) heat input or less shall record and maintain records of the fuels combusted during each calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[55 FR 37683, Sept. 12, 1990, as amended at 64 FR 7465, Feb. 12, 1999; 65 FR 61753, Oct. 17, 2000; 71 FR 9886, Feb. 27, 2006]

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
and VCAPC**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
CERTIFICATION**

Source Name: Burkes Garden Wood Products  
Source Address: 1400 E. Polymer Drive, Terre Haute, Indiana 47802  
Mailing Address: 1400 E. Polymer Drive, Terre Haute, Indiana 47802  
FESOP Permit No.: F167-25148-00144

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.**

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify) \_\_\_\_\_
- Report (specify) \_\_\_\_\_
- Notification (specify) \_\_\_\_\_
- Affidavit (specify) \_\_\_\_\_
- Other (specify) \_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE BRANCH  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
Phone: 317-233-0178  
Fax: 317-233-6865**

**and VCAPC**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
EMERGENCY OCCURRENCE REPORT**

Source Name: Burkes Garden Wood Products  
Source Address: 1400 E. Polymer Drive, Terre Haute, Indiana 47802  
Mailing Address: 1400 E. Polymer Drive, Terre Haute, Indiana 47802  
FESOP Permit No.: F167-25148-00144

**This form consists of 2 pages**

**Page 1 of 2**

- |  |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none"><li>• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and</li><li>• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16</li></ul> |
|--|

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency?    Y    N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF AIR QUALITY  
 COMPLIANCE DATA SECTION  
 and VCAPC  
 FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
 QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Burkes Garden Wood Products  
 Source Address: 1400 E. Polymer Drive, Terre Haute, Indiana 47802  
 Mailing Address: 1400 E. Polymer Drive, Terre Haute, Indiana 47802  
 FESOP Permit No.: F167-25148-00144

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked No deviations occurred this reporting period.</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

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

Burkes Garden Wood Products  
1400 E. Polymer Drive  
Terre Haute, Indiana 47802

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 Burkes Garden Wood Products, located at 1400 E. Polymer Drive, Terre Haute, Indiana 47802, completed construction of the manufacturing plant for production of heat-treated lumber on in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on: 10/16/2007 and as permitted pursuant to New Source Construction Permit and Federally Enforceable State Operating Permit No. F167-25148-00144, Plant ID No. 167-00144 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)

# Indiana Department of Environmental Management Office of Air Quality

## Addendum to the Technical Support Document (TSD) for a New Source Construction and a Federally Enforceable Operating Permit (FESOP)

### Source Background and Description

Source Name:	Burkes Garden Wood Products
Source Location:	1400 E. Polymer Drive, Terre Haute, Indiana, 47802
County:	Vigo County
SIC Code:	2499
MSOP No.:	F167-25148-00144
Permit Reviewer:	Swarna Prabha

On December 28, 2007, the Office of Air Quality (OAQ) had a notice published in Tribune Star, Terre Haute, Indiana, stating that Burkes Garden Wood Products had applied for a New Source Construction Permit and Federally Enforceable Operating Permit (FESOP) to operate stationary manufacturing plant for production of heat-treated lumber, located at 1400 E. Polymer Drive, Terre Haute, Indiana, 47802. The notice also stated that the OAQ proposed to issue a FESOP for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

The following comments were submitted to IDEM, OAQ on the draft FESOP. NOTE: The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes.

### Comments and Responses

On January 25, 2008, Dan Goodwin, an environmental consultant, on behalf of Burkes Garden Wood Products submitted comment on the draft FESOP. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

**Comment 1:** The source requests that the facility identified as one (1) No. 2 distillate oil storage tank with maximum volume of 10,000 gallons needs to be changed to 15, 000 gallons storage capacity.

**Response to Comment 1:** As requested by the Permittee, the FESOP permit, the facility description in Section A.2 (d) has been revised as follows:

(d) One (1) No. 2 distillate oil storage tank, approved for construction in 2008, identified as Tank, with a maximum volume of ~~10,000~~ **15,000** gallons.

There are no changes in the rule applicability due to this increase in capacity of the tank.

#### Additional changes:

IDEM, OAQ has decided to clarify that the major specific organic HAP is "Toluene" as the major HAP. In addition TSD calculations have been revised to include additional HAPs in ATSD Appendix A. The permit Sections D.1.2 and D.1.6 are revised as follows:

#### D.1.2 Hazardous Air Pollutants (HAP) [326 IAC 2-8-4]

In order to render the requirements of 326 IAC 2-7 (Part 70 Permits), the Permittee shall comply with the following:

...

(b) The emissions of ~~each single HAP~~ **Toluene** after control from each of the wood treating

kilns (K1 through K5) shall not exceed 0.328 pounds per ton of wood input to each kiln.

...

**D.1.6 Testing Requirements [326 IAC 3-6] [326 IAC 2-8-5(1), (4)] [326 IAC 2-1.1-11]**

In order to demonstrate compliance with Conditions D.1.1 and D.1.2, the Permittee shall perform VOC and ~~organic HAP~~ **Toluene** testing on ~~each of the~~ **either** boilers B1 ~~and~~ or B2, when ~~the one~~ **or more of the** wood treating kiln ~~are~~ is operating, within 60 days after achieving the maximum capacity of the kilns, but no later than one hundred eighty (180) days after issuance of this permit, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

<b>IDEM Contact</b>
---------------------

Question regarding this permit can be directed to Ms. Swarna Prabha the Indiana Department of Environmental Management, Office of Air Quality, 100 North Senate Avenue, MC 6153 IGCN1003, Indianapolis, In 46204-2251 or by telephone at 317-234-5376 or toll free at 1-800-452-6027ext. 4-5376.

**Appendix A: Emissions Calculations  
Emission Summary**

**Company Name: Burkes Garden Wood Products  
Address City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802  
FESOP Permit No.: 167-25148-00144  
Reviewer: S. Prabha**

<b>Uncontrolled Potential Emissions (tons/year)</b>						
Category	Pollutant	Wood Treating	Wood Fired	#2 Fuel Oil Fired	Storage Tank	TOTAL
		Kilns K1-K5	Boiler B2	Boiler B1		
Criteria Pollutants	PM		26.28	0.61		26.89
	PM10		23.65	2.00		25.65
	SO2		1.64	43.09		44.74
	NOx		32.19	12.14		44.33
	VOC	1,159.94	1.12	0.12	0.016	1161.19
	CO		39.42	3.03		42.45
Hazardous Air Pollutants	Acetaldehyde	1.03				1.03
	Acrolein		0.26			0.26
	Arsenic		1.45E-03	3.40E-04		1.8E-03
	Benzene		0.28			0.28
	Beryllium			2.55E-04		2.5E-04
	Cadmium			2.55E-04		2.5E-04
	Chromium			2.55E-04		2.5E-04
	Formaldehyde	0.84	0.29			1.13
	Hydrogen Chloride		1.25			1.25
	Lead		2.10E-04	7.65E-04		9.7E-04
	Manganese		0.11	5.10E-04		0.11
	Mercury		2.30E-04	2.55E-04		4.8E-04
	Methanol	2.35				2.35
	Nickel		2.17E-03	2.55E-04		2.4E-03
	Selenium			1.27E-03		1.3E-03
	Styrene		0.12			0.12
Toluene	24.82				24.82	
	<b>Totals</b>	<b>29.05</b>	<b>2.31</b>	<b>4.16E-03</b>	<b>0</b>	<b>31.36</b>

Total emissions based on rated capacity at 8,760 hours/year.

<b>Controlled/Limited Potential Emissions (tons/year)</b>						
Emissions Generating Activity						
Category	Pollutant	Wood Treating	Wood Fired	#2 Fuel Oil Fired	Storage Tank	TOTAL
		Kilns K1-K5	Boiler B2	Boiler B1		
Criteria Pollutants	PM		19.71	0.61		20.32
	PM10		17.74	2.00		19.74
	SO2		1.64	43.09		44.74
	NOx		32.19	12.14		44.33
	VOC	97.8	1.12	0.12	0.016	99.01
	CO		39.42	3.03		42.45
Hazardous Air Pollutants	Toluene Limit	9.90	---	---	---	---
	Total HAPs Limit	22.48	---	---	---	---
	<b>Totals</b>	<b>22.48</b>	<b>2.31</b>	<b>4.16E-03</b>	<b>0</b>	<b>24.79</b>

Total emissions based on rated capacity at 8,760 hours/year.

**Appendix A: Emissions Calculations**  
**Wood Treating Kilns K1-K5**

ATSD Appendix A: Page 2 of 3

**Company Name: Burkes Garden Wood Products**  
**Address, City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802**  
**FESOP Permit No.: 167-25148-00144**  
**Reviewer: S. Prabha**

Density of Wood (kg wood/m3 wood) = 500  
Density of Wood (ton wood/m3 wood) = 0.551

**Maximum Wood Throughput of Kilns**

Emission Unit	Batch Size (m3 of wood/batch)	Batch Size (kg of wood/batch)	Cycle Time (hours)	Maximum Throughput (ton of wood/hour)	Maximum Throughput (ton of wood/year)	Maximum Throughput (kg wood/year)	Maximum Throughput (million linear foot wood/year)
Kiln K1	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K2	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K3	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K4	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K5	60	30,000	24	1.378	12,070	10,950,000	10.95
<b>Totals</b>	<b>300</b>	<b>150,000</b>		<b>6.89</b>	<b>60,351</b>	<b>54,750,000</b>	<b>54.8</b>

**Uncontrolled/Unlimited Potential to Emit VOC and HAPs**

Pollutant	Uncontrolled Emission Factor (kg VOC/m3 wood)	Uncontrolled Emission Factor (lb VOC/ton wood)
VOC*	9.61	38.44
Toluene*	0.21	0.823
Acetaldehyde**	0.0085	0.034
Formaldehyde**	0.0070	0.028
Methanol**	0.0195	0.078

Emission Unit	PTE of VOC (Before Control) (tons/year)	PTE of Toluene (HAP) (Before Control) (tons/year)	PTE of Acetaldehyde (HAP) (Before Control) (tons/year)	PTE of Formaldehyde (HAP) (Before Control) (tons/year)	PTE of Methanol (HAP) (Before Control) (tons/year)	PTE of Total HAPs (Before Control) (tons/year)
Kiln K1	232.0	4.96	0.21	0.17	0.47	5.81
Kiln K2	232.0	4.96	0.21	0.17	0.47	5.81
Kiln K3	232.0	4.96	0.21	0.17	0.47	5.81
Kiln K4	232.0	4.96	0.21	0.17	0.47	5.81
Kiln K5	232.0	4.96	0.21	0.17	0.47	5.81
<b>Totals</b>	<b>1159.9</b>	<b>24.82</b>	<b>1.03</b>	<b>0.84</b>	<b>2.35</b>	<b>29.05</b>

**IDEM, OAQ has determined that the following requirements represent BACT for each of the wood treating kilns (kilns K1 through K5) at the source:**

- (a) The VOC emissions from the wood treating kilns K1 through K5 shall be controlled by boiler B1 and/or boiler B2
- (b) The overall VOC control efficiency for each of the boilers (B1 and B2) (including the capture efficiency and destruction efficiency) shall be at least 99%.

Therefore, pursuant to 326 IAC 8-1-6 BACT, the VOC emissions from the kilns after controls will be:

Overall Required VOC Control Efficiency = 99.0%

Pollutant	Controlled Emission Factor (kg VOC/m3 wood)	Controlled Emission Factor (lb VOC/ton wood)
VOC*	0.0961	0.38
Toluene*	2.1E-03	8.2E-03
Acetaldehyde**	8.5E-05	3.4E-04
Formaldehyde**	7.0E-05	2.8E-04
Methanol**	2.0E-04	7.8E-04

Emission Unit	PTE of VOC (After Control) (tons/year)	PTE of Toluene (HAP) (After Control) (tons/year)	PTE of Acetaldehyde (HAP) (After Control) (tons/year)	PTE of Formaldehyde (HAP) (After Control) (tons/year)	PTE of Methanol (HAP) (After Control) (tons/year)	PTE of Total HAPs (After Control) (tons/year)
Kiln K1	2.32	0.05	2.1E-03	1.7E-03	4.7E-03	5.8E-02
Kiln K2	2.32	0.05	2.1E-03	1.7E-03	4.7E-03	5.8E-02
Kiln K3	2.32	0.05	2.1E-03	1.7E-03	4.7E-03	5.8E-02
Kiln K4	2.32	0.05	2.1E-03	1.7E-03	4.7E-03	5.8E-02
Kiln K5	2.32	0.05	2.1E-03	1.7E-03	4.7E-03	5.8E-02
<b>Totals</b>	<b>11.6</b>	<b>0.25</b>	<b>0.010</b>	<b>0.008</b>	<b>0.024</b>	<b>0.290</b>

**Limited Potential to Emit VOC and Toluene (HAP) in order to render 326 IAC 2-7 (Part 70 Permits) not applicable**

Emission Unit	Limited VOC Emissions After Control (kg VOC/m3 wood)	Limited VOC Emissions After Control (lb VOC/ton wood)	Limited PTE of VOC (lbs/hour)	Limited PTE of VOC (tons/year)	Limited Toluene Emissions After Control (lb VOC/ton wood)	Limited PTE of Toluene (tons/year)	Limited Total HAP Emissions After Control (lb VOC/ton wood)	Limited PTE of Total HAPs (tons/year)
Kiln K1	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K2	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K3	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K4	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K5	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
<b>Totals</b>			<b>22.32</b>	<b>97.77</b>		<b>9.897</b>		<b>22.481</b>

**METHODOLOGY**

\*VOC and toluene emission factors provided by Stellac (manufacturer of kilns). Toluene emissions estimated at 2.14% of the VOC emissions.  
 \*\*Acetaldehyde, formaldehyde, and methanol emission factors from AP-42 Table 10.5-3, Plywood Veneer Dryers (Indirect heated dryer for softwood)  
 Maximum Throughput (ton of wood/hour) = [Batch Size (m3 of wood/batch)] \* [Density of Wood (ton wood/m3 wood)] / [Cycle Time (hours)]  
 Maximum Throughput (ton of wood/year) = [Maximum Throughput (ton of wood/hour)] \* [8760 hours/year]  
 Throughput (kg wood/year) = [Throughput (ton of wood/year)] \* [2000 lbs/ton] \* [0.4536 kg/lb]  
 Throughput (million linear foot wood/year) = [Throughput (kg wood/year)] \* [linear foot wood/kg wood] \* [million linear foot wood / 1E6 linear foot wood]  
 VOC Emission Factor (lb VOC/ton wood) = [VOC Emission Factor (kg VOC/m3 wood)] / [Density of Wood (ton wood/m3 wood)] \* [lb VOC/0.4536 kg VOC]  
 PTE of VOC (lbs/hour) = [Maximum Throughput (ton of wood/hour)] \* [VOC Emission Factor (lb VOC/ton wood)]  
 PTE of VOC (tons/year) = [Maximum Throughput (ton of wood/year)] \* [VOC Emission Factor (lb VOC/ton wood)] \* [ton/2000 lbs]  
 PTE of Each HAP (tons/year) = [Maximum Throughput (ton of wood/year)] \* [VOC Emission Factor (lb VOC/ton wood)] \* [ton/2000 lbs]

**VOC Emissions from the kilns after controls, pursuant to 326 IAC 8-1-6 BACT**

PTE of VOC (After Control) (tons/year) = [Maximum Throughput (ton of wood/year)] \* [Controlled VOC Emission Factor (lb VOC/ton wood)] \* [ton VOC/2000 lbs VOC]

**326 IAC 2-7 Avoidance Limit**

Limited PTE of VOC (tons/year) = [Maximum Throughput (ton of wood/year)] \* [Limited VOC Emission Factor (lb VOC/ton wood)] \* [ton VOC/2000 lbs VOC]

Limited PTE of Toluene (tons/year) = [Maximum Throughput (ton of wood/year)] \* [Limited Toluene Emission Factor (lb VOC/ton wood)] \* [ton VOC/2000 lbs VOC]

**Appendix A: Emissions Calculations  
NO. 2 Fuel Oil Storage Tank**

**Company Name: Burkes Garden Wood Products  
Address, City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802  
FESOP Permit No.: 167-25148-00144  
Reviewer: S. Prabha**

**Tank Dimensions**

Shell Length (ft):	18
Diameter (ft):	10
Volume (gallons):	15,000.00
Turnovers:	0
Net Throughput(gal/yr):	1,213,886.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

**Paint Characteristics**

Shell Color/Shade:	Red/Primer
Shell Condition	Good

**Breather Vent Settings**

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Indianapolis, Indiana (Avg Atmospheric Pressure = 14.33 psia)

Mixture/Component	Month	Daily Liquid Surface Temperature (deg F)			Liquid Bulk Temp	Vapor Pressure (psia)			Vapor Mol.	Molecular Weight	Basis for Vapor Pressure
		Avg.	Min.	Max.		Avg.	Min.	Max.			
Distillate fuel oil no. 2	All	63.81	52.17	75.46	56.6	0.0075	0.0049	0.0106	130	188	Option 1: VP60 = .0065 VP70 = .009

Components	VOC Losses (lbs/year)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil No. 2	28.01	4.82	32.82

**Appendix A: Emissions Calculations  
Emission Summary**

**Company Name: Burkes Garden Wood Products  
Address City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802  
FESOP Permit No.: 167-25148-00144  
Reviewer: S. Prabha**

Uncontrolled Potential Emissions (tons/year)						
Category	Pollutant	Wood Treating Kilns K1-K5	Wood Fired Boiler B2	#2 Fuel Oil Fired Boiler B1	Storage Tank	TOTAL
Criteria	PM		26.28	0.61		26.89
Pollutants	PM10		23.65	2.00		25.65
	SO2		1.64	43.09		44.74
	NOx		32.19	12.14		44.33
	VOC	1,159.94	1.12	0.12	0.016	1161.19
	CO		39.42	3.03		42.45
Hazardous Air Pollutants	Acrolein		0.26			0.26
	Chromium			2.55E-04		2.5E-04
	Manganese		0.11	5.10E-04		0.11
	Nickel		2.17E-03	2.55E-04		2.4E-03
	Toluene	24.82				24.82
	Benzene		0.28			0.28
	Hydrogen Chloride		1.25			1.25
	Formaldehyde		0.29			0.29
	Lead		2.10E-04	7.65E-04		9.7E-04
	Selenium			1.27E-03		1.3E-03
	Beryllium			2.55E-04		2.5E-04
	Mercury		2.30E-04	2.55E-04		4.8E-04
	Arsenic		1.45E-03	3.40E-04		1.8E-03
	Styrene		0.12			0.12
	Cadmium			2.55E-04		2.5E-04
<b>Totals</b>		<b>24.82</b>	<b>2.31</b>	<b>4.16E-03</b>	<b>0</b>	<b>27.01</b>

Total emissions based on rated capacity at 8,760 hours/year.

Controlled/Limited Potential Emissions (tons/year)						
Emissions Generating Activity						
Category	Pollutant	Wood Treating Kilns K1-K5	Wood Fired Boiler B2	#2 Fuel Oil Fired Boiler B1	Storage Tank	TOTAL
Criteria	PM		19.71	0.61		20.32
Pollutants	PM10		17.74	2.00		19.74
	SO2		1.64	43.09		44.74
	NOx		32.19	12.14		44.33
	VOC	97.8	1.12	0.12	0.016	99.01
	CO		39.42	3.03		42.45
Hazardous Air Pollutants	Acrolein		0.26			0.26
	Chromium			2.55E-04		2.55E-04
	Manganese		0.11	5.10E-04		0.11
	Nickel		2.17E-03	2.55E-04		2.42E-03
	Toluene	9.90				9.90
	Benzene		0.28			0.28
	Hydrogen Chloride		1.25			1.25
	Formaldehyde		0.29			0.29
	Lead		2.10E-04	7.65E-04		9.75E-04
	Selenium			1.27E-03		1.27E-03
	Beryllium			2.55E-04		2.55E-04
	Mercury		2.30E-04	2.55E-04		4.85E-04
	Arsenic		1.45E-03	3.40E-04		1.79E-03
	Styrene		0.12			0.12
	Cadmium			2.55E-04		2.55E-04
<b>Totals</b>		<b>22.48</b>	<b>2.31</b>	<b>4.16E-03</b>	<b>0.00</b>	<b>24.79</b>

Total HAP shall not exceed

**Appendix A: Emissions Calculations  
Wood Treating Kilns K1-K5**

**Company Name: Burkes Garden Wood Products**  
**Address, City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802**  
**FESOP Permit No.: 167-25148-00144**  
**Reviewer: S. Prabha**

Density of Wood (kg wood/m <sup>3</sup> wood) =	500
Density of Wood (ton wood/m <sup>3</sup> wood) =	0.551

**Maximum Wood Throughput of Kilns**

Emission Unit	Batch Size (m <sup>3</sup> of wood/batch)	Batch Size (kg of wood/batch)	Cycle Time (hours)	Maximum Throughput (ton of wood/hour)	Maximum Throughput (ton of wood/year)	Maximum Throughput (kg wood/year)	Maximum Throughput (million linear foot wood/year)
Kiln K1	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K2	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K3	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K4	60	30,000	24	1.378	12,070	10,950,000	10.95
Kiln K5	60	30,000	24	1.378	12,070	10,950,000	10.95
<b>Totals</b>	<b>300</b>	<b>150,000</b>		<b>6.89</b>	<b>60,351</b>	<b>54,750,000</b>	<b>54.8</b>

**Uncontrolled/Unlimited Potential to Emit VOC and HAPs**

Emission Unit	Uncontrolled VOC Emission Factor (kg VOC/m <sup>3</sup> wood)*	Uncontrolled VOC Emission Factor (lb VOC/ton wood)*	PTE of VOC (Before Control) (lbs/hour)	PTE of VOC (Before Control) (tons/year)	Toluene (HAP) Content (% by weight)*	PTE of Toluene (HAP) (Before Control) (tons/year)
Kiln K1	9.61	38.44	53.0	232.0	2.14%	4.96
Kiln K2	9.61	38.44	53.0	232.0	2.14%	4.96
Kiln K3	9.61	38.44	53.0	232.0	2.14%	4.96
Kiln K4	9.61	38.44	53.0	232.0	2.14%	4.96
Kiln K5	9.61	38.44	53.0	232.0	2.14%	4.96
<b>Totals</b>			<b>264.8</b>	<b>1159.9</b>		<b>24.82</b>

**IDEM, OAQ has determined that the following requirements represent BACT for each of the wood treating kilns (kilns K1 through K5) at the source:**

- (a) The VOC emissions from the wood treating kilns K1 through K5 shall be controlled by boiler B1 and/or boiler B2
- (b) The overall VOC control efficiency for each of the boilers (B1 and B2) (including the capture efficiency and destruction efficiency) shall be at least 99%.

Therefore, pursuant to 326 IAC 8-1-6 BACT, the VOC emissions from the kilns after controls will be:

Overall Required Control Efficiency = 99.0%

Emission Unit	Controlled VOC Emission Factor (kg VOC/m <sup>3</sup> wood)	Controlled VOC Emission Factor (lb VOC/ton wood)	PTE of VOC (After Control) (lbs/hour)	PTE of VOC (After Control) (tons/year)	Toluene (HAP) Content (% by weight)*	PTE of Toluene (HAP) (After Control) (tons/year)
Kiln K1	0.0961	0.384	0.53	2.32	2.14%	0.05
Kiln K2	0.0961	0.384	0.53	2.32	2.14%	0.05
Kiln K3	0.0961	0.384	0.53	2.32	2.14%	0.05
Kiln K4	0.0961	0.384	0.53	2.32	2.14%	0.05
Kiln K5	0.0961	0.384	0.53	2.32	2.14%	0.05
<b>Totals</b>			<b>2.65</b>	<b>11.60</b>		<b>0.25</b>

**Limited Potential to Emit VOC and Toluene (HAP) in order to render 326 IAC 2-7 (Part 70 Permits) not applicable**

Emission Unit	Limited VOC Emissions After Control (kg VOC/m <sup>3</sup> wood)	Limited VOC Emissions After Control (lb VOC/ton wood)	Limited PTE of VOC (lbs/hour)	Limited PTE of VOC (tons/year)	Limited Single HAP Emissions After Control (lb VOC/ton wood)	Limited PTE of Single HAP (tons/year)	Limited Total HAP Emissions After Control (lb VOC/ton wood)	Limited PTE of Total HAPs (tons/year)
Kiln K1	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K2	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K3	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K4	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
Kiln K5	0.81	3.24	4.46	19.55	0.328	1.979	0.745	4.496
<b>Totals</b>			<b>22.32</b>	<b>97.77</b>		<b>9.897</b>		<b>22.481</b>

**METHODOLOGY**

\*VOC and HAP contents provided by Stellac- Manufacturer of Kilns  
 Maximum Throughput (ton of wood/hour) = [Batch Size (m<sup>3</sup> of wood/batch)] \* [Density of Wood (ton wood/m<sup>3</sup> wood)] / [Cycle Time (hours)]  
 Maximum Throughput (ton of wood/year) = [Maximum Throughput (ton of wood/hour)] \* [8760 hours/year]  
 Throughput (kg wood/year) = [Throughput (ton of wood/year)] \* [2000 lbs/ton] \* [0.4536 g/lb]  
 Throughput (million linear foot wood/year) = [Throughput (kg wood/year)] \* [linear foot wood/kg wood] \* [million linear foot wood / 1E6 linear foot wood]  
 VOC Emission Factor (lb VOC/ton wood) = [(VOC Emission Factor (kg VOC/m<sup>3</sup> wood)) / [Density of Wood (ton wood/m<sup>3</sup> wood)]] \* [lb VOC/0.4536 kg VOC]  
 PTE of VOC (lbs/hour) = [Maximum Throughput (ton of wood/hour)] \* [VOC Emission Factor (lb VOC/ton wood)]  
 PTE of VOC (tons/year) = [PTE of VOC (lbs/hour)] \* [8760 hour/year] \* [ton/2000 lbs]  
 PTE of Toluene (HAP) (tons/year) = [PTE of VOC (tons/year)] \* [Toluene (HAP) Content (% by weight)]

**VOC Emissions from the kilns after controls, pursuant to 326 IAC 8-1-6 BACT**

PTE of VOC (After Control) (tons/year) = [Maximum Throughput (ton of wood/year)] \* [Controlled VOC Emission Factor (lb VOC/ton wood)] \* [ton VOC/2000 lbs VOC]

**326 IAC 2-7 Avoidance Limit**

Limited PTE of VOC (tons/year) = [Maximum Throughput (ton of wood/year)] \* [Limited VOC Emission Factor (lb VOC/ton wood)] \* [ton VOC/2000 lbs VOC]

**Appendix A: Emissions Calculations  
Wood Fired Underfeed Stoker**

TSD Appendix A: Page 3 of 6

**Company Name: Burkes Garden Wood Products**  
**Address, City IN Zip: 1400 E. Polymer Drive, Terre Houte, Indiana, 47802**  
**FESOP Permit No.: 167-25148-00144**  
**Reviewer: S. Prabha**

Heat Input Capacity

MMBtu/hr  
15

Emission Factor in lb/MMBtu	Pollutant						Controlled PM	
	PM10 0.36	PM 0.4	SO2 0.025	NOx 0.49	VOC 0.017	CO 0.6	PM10 0.27	PM 0.3
Potential Emission in tons/yr	23.65	26.28	1.64	32.19	1.12	39.42	17.739	19.71

**HAPs Metals**

Emission Factor in lb/mmBtu	Arsenic 2.2E-05	Lead 4.8E-05	Mercury 3.5E-06	Manganese 1.6E-03	Nickel 3.3E-05
Potential Emission in tons/yr	1.45E-03	2.10E-04	2.3E-04	1.1E-01	2.2E-03

**Haps -Organics**

Emission Factor in lb/MMBtu	Acrolein 4.00E-03	Benzene 4.20E-03	Formaldehyde 4.40E-03	Hydrogen Chloride 1.90E-02	Styrene 1.90E-03
Potential Emissions in tons/yr	2.63E-01	2.76E-01	2.89E-01	1.25E+00	1.25E-01

**Methodology**

Emission Factors are from AP 42, Tables 1.6-1, 1.6-2, and 1.6-4 Supplement E 1999 (see erata file)

Potential Emissions (tons/year) = Throughput (mmBtu/hr)\*Emission Factor (lb/mmBtu)\*8,760 hrs/yr / 2,000 lb/ton

PM = Particulate Matter  
 PM10 = Particulate Matter (<10 um)  
 SO2 = Sulfur Dioxide  
 Nox = Nitrous Oxide  
 VOC = Volatile Organic Compounds  
 CO = Carbon Monoxide  
 MMBtu = 1,000,000 Btu

**Appendix A: Emissions Calculations**  
**Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)**  
**No. 2 Fuel Oil Boiler**

**Company Name: Burkes Garden Wood Products**  
**Address, City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802**  
**FESOP Permit No.: 167-25148-00144**  
**Reviewer: S. Prabha**

Heat Input Capacity  
MMBtu/hr  
19.4

Potential Throughput  
kgals/year  
1213.89

S = Weight % Sulfur  
0.5

Emission Factor in lb/kgal	Pollutant					
	PM10	PM	SO2	NOx	VOC	CO
	3.3	1.0	71 (142.0S)	20.0	0.20	5.0
Potential Emission in tons/yr	2.00	0.61	43.1	12.14	0.12	3.03

**Haps**

Emission Factor in lb/mmBtu	Arsenic	Beryllium	Cadmium	Chromium	Lead	Mercury	Manganese	Nickel	Selenium
	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential Emission in tons/yr	3.40E-04	2.55E-04	2.55E-04	2.55E-04	7.65E-04	2.55E-04	5.10E-04	2.55E-04	1.27E-03

**Methodology**

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

PM10 Emission Factors are Condensable and FilterablePM10

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file) 1.3-10,

PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.

Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

Potential Emissions (tons/year) = Throughput (mmBtu/hr)\*Emission Factor (lb/mmBtu)\*8,760 hrs/yr / 2,000 lb/ton

**Appendix A: Emissions Calculations  
Vehicle Traffic-Unpaved Roads at Industrial Site**

**Company Name: Burkes Garden Wood Products**  
**Address City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802**  
**FESOP Permit No.: 167-25148-00144**  
**Reviewer: S. Prabha**

The following calculations determine the amount of emissions created by vehicle traffic on unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Vehicle Information (provided by source)

Type	Maximum trips per hour (trip/hr)	Maximum Weight Loaded (tons/trip)	Total Weight driven per hour (ton/hr)	Maximum roundtrip distance (mi/trip)	Maximum miles driven (miles/yr)
**Vehicle traffic-	0.6	20.0	12.0	0.108	531.4

Average Vehicle Weight Per Trip = 

20.0
------

 tons/trip  
Average Miles Per Trip = 

0.108
-------

 miles/trip

Unmitigated Emission Factor,  $E_f = k * [(s/12)^a] * [(W/3)^b]$  (Equation 1a from AP-42 13.2.2)

	PM	PM10	
where k =	4.9	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	8.4	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-(Lumber sawmill)
a =	0.7	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.0	20.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E * [(365 - P)/365]$   
Mitigated Emission Factor,  $E_{ext} = E * [(365 - P)/365]$   
where P = 

125
-----

 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

Unmitigated Emission Factor,  $E_f =$ 

8.96	1.54
------	------

 lb/mile  
Mitigated Emission Factor,  $E_{ext} =$ 

8.96	1.54
------	------

 lb/mile  
Dust Control Efficiency = 

50%	50%
-----	-----

 (pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Vehicle traffic-	2.38	0.41	2.38	0.41	1.19	0.21

**Methodology**

Total Weight driven per hour (tons/hr) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per hour (trip/hr)]  
Maximum miles Vehicle driven per year = [Maximum Roundtrip distance (mi/trip)] \* [Maximum trips per hour (trips/hr)] \* 8760 (hrs/yr)  
Unmitigated PTE (tons/yr) = (Maximum roundtrip miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = (Maximum roundtrip miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)  
**\*\*NOTE:** Emissions from the Vehicle Traffic are fugitive and are not subject to 326 IAC 6.3-2.

**Appendix A: Emissions Calculations  
 NO. 2 Fuel Oil Storage Tank**

**Company Name: Burkes Garden Wood Products  
 Address, City IN Zip: 1400 E. Polymer Drive, Terre Haute, Indiana, 47802  
 FESOP Permit No.: 167-25148-00144  
 Reviewer: S. Prabha**

**Tank Dimensions**

Shell Length (ft):	18
Diameter (ft):	10
Volume (gallons):	10,000.00
Turnovers:	0
Net Throughput(gal/yr):	1,213,886.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

**Paint Characteristics**

Shell Color/Shade:	Red/Primer
Shell Condition	Good

**Breather Vent Settings**

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Indianapolis, Indiana (Avg Atmospheric Pressure = 14.33 psia)

Mixture/Component	Month	Daily Liquid Surface Temperature (deg F)			Liquid Bulk Temp	Vapor Pressure (psia)			Vapor Mol.	Molecular Weight	Basis for Vapor Pressure
		Avg.	Min.	Max.		Avg.	Min.	Max.			
Distillate fuel oil no. 2	All	63.81	52.17	75.46	56.6	0.0075	0.0049	0.0106	130	188	Option 1: VP60 = .0065 VP70 = .009

Components	VOC Losses (lbs/year)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil No. 2	28.01	4.82	32.82

**Indiana Department of Environmental Management  
Office of Air Quality  
And  
Vigo County Air Pollution Control**

Technical Support Document (TSD) for a New Source Construction  
and Federally Enforceable State Operating Permit (FESOP)

<b>Source Description and Location</b>
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<b>Source Name:</b>	<b>Burkes Garden Wood Products</b>
<b>Source Location:</b>	<b>1400 E. Polymer Drive, Terre Haute, Indiana, 47802</b>
<b>County:</b>	<b>Vigo County</b>
<b>SIC Code:</b>	<b>2499</b>
<b>Operation Permit No.:</b>	<b>F167-25148-00144</b>
<b>Permit Reviewer:</b>	<b>Swarna Prabha</b>

<b>Existing Approvals</b>
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There have been no previous approvals issued to this source.

<b>County Attainment Status</b>
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The source is located in Vigo County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Ozone Standards

- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (2) On September 6, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Allen, Clark, Elkhart, Floyd, LaPorte, and St. Joseph as attainment for the 8-hour ozone standard.
- (3) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
- (4) 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. Vigo 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) Vigo County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.
- (c) Vigo County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

**Fugitive Emissions**

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.

**Background and Description of New Source Construction**

The Office of Air Quality (OAQ) have reviewed a new source construction application, submitted by Burkes Garden Wood Products on August 16, 2007, relating to the construction and operation of a new manufacturing plant for production of heat-treated lumber. The following is a list of the proposed emission units and pollution control devices:

- (a) One (1) No. 2 fuel oil-fired boiler, approved for construction in 2008, identified as B1, with a maximum heat input capacity of 19.40 MMBtu/hr, using no control, providing steam to help modulate the temperature and moisture conditions in the kilns, and exhausting to stack S01. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B1 is considered an affected source.
- (b) One (1) wood waste-fired boiler, approved for construction in 2008, identified as B2, with a maximum heat input capacity of 15.00 MMBtu/hr, equipped with multiclones for control of particulate matter and exhausting to stack S02. Under NSPS 40 CFR Part 60, Subpart Dc, boiler B2 is considered an affected source.
- (c) Five (5) Stellac wood treating kilns, approved for construction in 2008, identified as K1 through K5, respectively, each with a maximum capacity of 33.07 tons of wood per batch, with VOC and HAP emissions controlled by boilers B1 and/or B2, and exhausting to either stack S01 and/or S02.
- (d) One (1) No. 2 distillate oil storage tank, approved for construction in 2008, identified as Tank, with a maximum volume of 10,000 gallons.

**Enforcement Issues**

There are no pending enforcement actions.

**Stack Summary**

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
1	Boiler B1	84	2.83	6000	650
2	Boiler B2	84	2.00	14000	650

**Emission Calculations**

See Appendix A of this TSD for detailed emission calculations (Appendix A Pages 1 - 5).

**Permit Level Determination – FESOP**

Pursuant to 326 IAC 2-7-1(29), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

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

<b>Pollutant</b>	<b>Potential To Emit (tons/year)</b>
PM	26.89
PM10 <sup>(1)</sup>	25.65
SO <sub>2</sub>	44.74
VOC	1161.19
CO	42.45
NO <sub>x</sub>	44.33

(1) Under the Part 70 Permit program US EPA has directed states to regulate PM10 Emissions as surrogate for PM2.5 emissions.

<b>HAPs</b>	<b>Potential To Emit (tons/year)</b>
Hydrogen Chloride	1.25
Benzene	0.28
Formaldehyde	0.29
Toluene	24.82
Lead	negligible
Manganese	0.11
Nickel	0.002
Acrolein	0.26
TOTAL	27.01

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOC is greater than 100 tons per year. The source would have been subject to the provisions of 326 IAC 2-7. However, the source will be issued a New Source Construction Permit (326 IAC 2-5.1-3) and a Federally Enforceable State Operating Permit (FESOP) (326 IAC 2-8), because the source will limit emissions to less than the Title V major source threshold levels.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all other criteria pollutants are less than 100 tons per year.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year and the PTE of a combination of HAPs is greater than twenty-five (25) tons per year. Therefore, the source would have been subject to the provisions of 326 IAC 2-7. However, the source will be issued a New Source Construction Permit (326 IAC 2-5.1-3) and a Federally Enforceable State Operating Permit (FESOP) (326 IAC 2-8), because the source will limit emissions of HAPs to less than the Title V major source threshold levels.

**Potential to Emit After Issuance of Entire Source (tons/year)**

The source has opted to become a FESOP source. The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this new source FESOP, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/Emission Unit	Potential to Emit After Issuance of Entire Source (tons/year)							
	PM	PM10 <sup>(1)</sup>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Worst Single HAP
Wood Treating Kilns (K1-K5) <sup>(2), (3)</sup>	0	0	0	0	< 97.8 <sup>(2)</sup>	0	< 22.48 <sup>(3)</sup>	< 9.90 <sup>(3)</sup> (Toluene)
Wood Waste-fired Boiler (B2) <sup>(4)</sup>	19.71	17.74	1.64	32.19	1.12	39.42	2.31	1.25 (HCl)
No. 2 fuel oil-fired Boiler (B1) <sup>(4)</sup>	0.61	2.00	43.09	12.14	0.12	3.03	0.0042	0.0012 (Selenium)
*Fuel Oil Storage Tank (Tank) <sup>(4)</sup>	0	0	0	0	0.016*	0	0	0
Total PTE of Entire Source	20.32	19.74	44.74	44.33	< 99.01	42.45	< 24.79	< 9.90 <sup>(3)</sup> (Toluene)
Title V Major Threshold Level	NA	100	100	100	100	100	25	10
PSD Major Threshold Level	250	250	250	250	250	250	NA	NA

\*Emissions from the storage tanks were provided by the Burkes Garden Wood products in electronic format using EPA TANKS software (version 4.09d) and have been verified to be correct.

- (1) US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.
- (2) In order to comply with 326 IAC 8-1-6 (BACT), the VOC emissions after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.384 pounds of VOC per ton of wood input. At a combined maximum throughput of 60,351 tons of wood per year for the five kilns, this limit is equivalent to 11.6 tons of VOC per year for the five kilns. Compliance with these limits, combined with the potential to emit VOC from the other emission units at the source, shall limit the total potential to emit VOC from the entire source to less than 100 tons VOC per twelve (12) consecutive month period and render 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-7 (Part 70 permits) not applicable.
- (3) In order to render the requirements of 326 IAC 2-7 (Part 70 Permits), the emissions of each single HAP and combined HAPs after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.328 and 0.745 pounds per ton of wood input, respectively. At a combined maximum throughput of 60,351 tons of wood per year for the five kilns, this limit is equivalent to 9.90 tons of single HAP per year and 22.48 tons of combined HAPs for the five kilns, respectively.  
  
Compliance with these limits, combined with the potential to emit HAPs from the other emission units at the source, shall limit the total potential to emit from the entire source to less than 10 tons of each single HAP per twelve (12) consecutive month period, and less than 25 tons of combined HAPs per twelve (12) consecutive month period and render 326 IAC 2-7 (Part 70 permits) not applicable.
- (4) Uncontrolled PTE.

(a) FESOP Status

This new source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source will be limited to less than the Title V major source threshold levels. In addition, this new source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is limited to less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

(b) PSD Minor Source

This new source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit VOC is limited to less than 250 tons per year and the potential to emit all other attainment regulated pollutants are less 250 tons per year, 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.

<b>Federal Rule Applicability Determination</b>
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The following federal rules are applicable to the source:

- (a) The requirements of New Source Performance Standards for Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60, Subpart Dc), which is incorporated by reference as 326 IAC 12, are included in the permit for each of the boilers (B1 and B2), since they each will commence construction after June 9, 1989 and each have a the heat input capacity of less than one hundred (100) million BTU per hour, but greater than ten (10) million BTU per hour.

Nonapplicable portions of the NSPS will not be included in the permit. The boilers are subject to the following portions of Subpart Dc.

- (1) 40 CFR 60.40c(a)
- (2) 40 CFR 60.41c
- (3) 40 CFR 60.42c(d)
- (4) 40 CFR 60.45c(a)
- (5) 40 CFR 60.47c(a)
- (6) 40 CFR 60.47c(b)
- (7) 40 CFR 60.47c(c)
- (8) 40 CFR 60.48c(a)
- (9) 40 CFR 60.48c(b)
- (10) 40 CFR 60.48c(c)
- (11) 40 CFR 60.48c(d)
- (12) 40 CFR 60.48c(e)
- (13) 40 CFR 60.48c(f)
- (14) 40 CFR 60.48c(g)
- (15) 40 CFR 60.48c(i)
- (16) 40 CFR 60.48c(j)

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1-1, apply to the emission units described in this section except when otherwise specified in 40 CFR 60, Subpart Dc.

- (b) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.
- (c) The requirements of 40 CFR 63, Subpart DDDD, National Emission Standards for Hazardous Air Pollutants for Plywood and Composite Wood Products (40 CFR 63.2230 through 63.2292), in the permit for this source, since this source does not perform plywood or composite wood products manufacturing. This source produces heat-treated lumber.
- (d) 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 this permit for this source.

### State Rule Applicability Determination

The following state rules are applicable to the source:

#### **326 IAC 2-8-4 (FESOP)**

FESOP applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

In order to render the requirements of 326 IAC 2-7 (Part 70 Permits), the Permittee shall comply with the following:

- (a) The HAP emissions from each of the wood treating kilns (K1 through K5) shall be controlled by boiler B1 and/or boiler B2.
- (b) The emissions of each single HAP after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.328 pounds per ton of wood input to each kiln.
- (c) The emission of combined HAPs after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.745 pounds per ton of wood input to each kiln.

Compliance with these limits, combined with the potential to emit HAPs from the other emission units at the source, shall limit the total potential to emit from the entire source to less than 10 tons of each single HAP per twelve (12) consecutive month period, and less than 25 tons of combined HAPs per twelve (12) consecutive month period and render 326 IAC 2-7 (Part 70 permits) not applicable.

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

PSD applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

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

This source is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from each of the units at this source is less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

#### **326 IAC 2-6-1 (b) (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 (Visible 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 the 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) This source is not located in the area of Vigo County referenced in 326 IAC 5-1-1(c)(8).

**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 6-5 (Fugitive Particulate Emissions Limitations)**

The potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the paved roads at this source are less than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are not applicable.

**326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)**

The wood treating kilns (kilns K1 through K5) will each be constructed after January 1, 1980 and will each have potential VOC emissions greater than twenty-five (25) tons per year. Therefore, each of the kilns is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions from each of the kilns using the Best Available Control Technology (BACT). According to the BACT analysis contained in Appendix B, IDEM, OAQ has determined that the following requirements represent BACT for each of the kilns:

- (a) The VOC emissions from the wood treating kilns K1 through K5 shall be controlled by boiler B1 and/or boiler B2.
- (b) The overall VOC control efficiency for each of the boilers (B1 and B2) (including the capture efficiency and destruction efficiency) shall be at least 99%.
- (c) The VOC emissions after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.384 pounds of VOC per ton of wood input to each kiln.

The above emission limit for each kiln was calculated as follows:

$$\begin{aligned} \text{BACT limit (lb/ton of wood)} &= \frac{\text{Uncontrolled PTE (tons/yr)} * (1 - \text{control efficiency}) * (2000 \text{ lb/ton})}{(\text{Maximum Throughput ton of wood/yr})} \\ &= \frac{(232 \text{ tons/yr}) * (1 - 0.99) * (2000 \text{ lb/ton})}{(12,070 \text{ ton of wood/yr})} \end{aligned}$$

$$\text{BACT limit} = 0.384 \text{ lb VOC/ton of wood}$$

The combined potential to emit after control for the five (5) wood treating kilns (K1 through K5) is calculated as follows:

$$\begin{aligned} \text{PTE (after control) (tons/yr)} &= \frac{\text{Uncontrolled PTE (tons/yr/kiln)} * (5 \text{ kilns}) * (1 - \text{control efficiency})}{(1 - \text{control efficiency})} \\ &= \frac{(232 \text{ tons/yr}) * (5) * (1 - 0.99)}{(1 - 0.99)} \end{aligned}$$

$$\text{PTE (after control)} = 11.6 \text{ tons VOC/yr (for 5 kilns)}$$

Compliance with these limits, combined with the potential to emit VOC from the other emission units at the source, shall limit the total potential to emit VOC from the entire source to less than 100 tons VOC per twelve (12) consecutive month period and render 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-7 (Part 70 permits) not applicable.

**326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)**

The source is not located in Clark, Floyd, Lake, or Porter County. Therefore, the requirements of 326 IAC 8-9-1 are not applicable to the tanks at this source.

**State Rule Applicability - Wood-Fired Boiler (Unit ID # B2) and No. 2 Fuel Oil-Fired Boiler (Unit ID # B1)**

**326 IAC 6-2-4 (Emission Limitations For Sources of Indirect Heating)**

The wood waste-fired boiler (B2) and the No. 2 fuel-fired boiler (B1) are subject to the requirements of 326 IAC 6-2-4 (Emission Limitations For Sources of Indirect Heating), because they were constructed after September 21, 1983. Pursuant to 326 IAC 6-2-4, the particulate emissions from the waste wood-fired boiler (B2) and the No. 2 fuel oil-fired boiler (B1) shall be limited to less than 0.43 pounds per million British thermal unit of heat input, each. This limit was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}} = \frac{1.09}{(34.4)^{0.26}} = 0.43 \text{ lbs of particulate per MMBtu}$$

Where Pt = pounds of particulate emitted per million British thermal unit heat input  
Q = total source maximum operation capacity (19.4 + 15 = 34.4 MMBtu/hr)  
Using the emission factor and heating value of 34.5MMBtu

No. 2 oil fired boiler PM emissions = 0.007 lbs/MMBtu  
Wood fired boiler PM emissions = 0.4 lbs / MMBtu

Total source maximum PM emissions from boiler B1 and boiler B2 = 0.407 lbs/MMBtu.

The 0.407 lbs/MMBtu emissions rate using the AP-42 emission factor is less than the 0.43 lb/MMBtu limit. Therefore, the boilers B1 and B2 are able to comply with 326 IAC 6-2-3 without control equipment.

<b>Compliance Determination, Monitoring, and Testing Requirements</b>
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Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs IDEM, OAQ and VCAPC, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a sources failure to take the appropriate corrective actions within a specific time period.

The compliance determination, monitoring, and testing requirements applicable to this source are as follows:

- (a) VOC and HAP emissions from the wood treating kilns K1 through K5 shall be controlled by boiler B1 and/or boiler B2.
- (b) The Permittee shall operate the boiler B1 and/or boiler B2 and control emissions from wood treating kilns K1 through K5 at all times that one or more of the wood treating kilns K1 through K5 are in operation and venting to the boiler B1 and/or boiler B2.
- (c) The Permittee shall perform VOC and organic HAP testing on each of the boilers B1 and B2, when the wood treating kilns are operating, in order to ensure compliance with 326 IAC 8-1-6 (BACT) and 326 IAC 2-8 (FESOP). These tests shall be repeated at least once every five (5)

years from the date of this valid compliance demonstration.

- (d) The Permittee shall continuously monitor and record the combustion zone temperature of such boiler(s). The Permittee shall operate the boilers B1 and B2 at or above a 3-hour average combustion zone temperature of 1,400°F or the 3-hour average temperature established during the most recent compliance stack test.
- (e) The Permittee shall observe the duct pressure or fan amperage at least once per day when the kilns are in operation. The Permittee shall maintain the duct pressure or fan amperage within the normal range as established in most recent compliance stack test.
- (f) The Permittee shall perform once per day visible emissions notations of boiler B1 and B2.

<b>Conclusion and Recommendation</b>
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- (a) The construction and operation of the entire source shall be subject to the conditions of the attached proposed New Source Construction and Federally Enforceable State Operating Permit (FESOP) No. 167-25148-00144.
- (b) Unless otherwise stated, information used in this review was derived from the application received by the Office of Air Quality (OAQ) on August 16, 2007. Additional information was received on October 9, 2007, October 15, 2007, November 14, 2007, and December 18, 2007.
- (c) Based on the facts, conditions, and evaluations made, the OAQ staff recommends to the IDEM's Commissioner that New Source Construction and Federally Enforceable State Operating Permit (FESOP) No. 167-25148-00144 be approved.
- (d) Copies of the preliminary findings have been provided to the Vigo County Public Library.

<b>IDEM Contact</b>
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- (a) Questions regarding this proposed permit can be directed to Swarna Prabha at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5376 or toll free at 1-800-451-6027 extension 4-5376.
- (b) A copy of the findings is available on the Internet at: [www.in.gov/idem/permits/air/pending.html](http://www.in.gov/idem/permits/air/pending.html).
- (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.in.gov/idem/permits/guide/](http://www.in.gov/idem/permits/guide/).

**Indiana Department of Environmental Management  
Office of Air Quality  
And  
Vigo County Air Pollution Control**

**Appendix B  
Best Available Control Technology (BACT) Determination**

**Technical Support Document (TSD) for a New Source Construction  
and Federally Enforceable State Operating Permit (FESOP)**

<b>Source Description and Location</b>
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<b>Source Name:</b>	<b>Burkes Garden Wood Products</b>
<b>Source Location:</b>	<b>1400 E. Polymer Drive, Terre Haute, Indiana, 47802</b>
<b>County:</b>	<b>Vigo County</b>
<b>SIC Code:</b>	<b>2499</b>
<b>Operation Permit No.:</b>	<b>F167-25148-00144</b>
<b>Permit Reviewer:</b>	<b>Nathan C. Bell</b>

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) review for construction and operation of a new manufacturing plant for production of heat-treated lumber.

**Description of Process and Potential Emissions**

In the heat-treated lumber process proposed by the source, one (1) No. 2 fuel oil-fired boiler (boiler B1) and one (1) wood waste-fired boiler (boiler B2) will provide steam to help modulate the temperature and moisture conditions in five (5) wood treating kilns (K1 through K5). The two boilers are part of the heat-treated lumber process design and have the primary function of drying/treating the lumber. During the lumber treating/drying process, moisture and volatile organic compounds (VOCs), which consist of both hazardous and non-hazardous air pollutants (HAPs), are driven out of the wet wood. The exhaust flow rate for each kiln is not expected to exceed 1,500 acfm and the combined exhaust flow from the kilns will not exceed 4,500 acfm. The source has proposed to control the VOC and HAP emissions generated in kilns K1 through K5 by combustion in boilers B1 and/or B2. For this wood treating process, the boilers are designed to have combustion zone temperatures between 1,800 and 2,000°F and sufficient residence time, flow velocity and mixing, and the oxygen concentration to oxidize VOCs in a waste stream, with VOC destruction efficiency of at least 99% on a consistent basis under normal operational conditions. The capture efficiency for the system will be designed at 100%. The only additional capital costs associated with this control option are the costs of two fans and associated ductwork to route the kiln exhausts back to the boilers. Operating costs for this control option will only consist of the energy costs for operation of the fans and the routine maintenance costs for the fans and ductwork.

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), BACT is required for all facilities constructed after January 1, 1980 that have potential VOC emissions of equal to or greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8. Based on the calculations (see TSD Appendix A) and the analysis of applicable state regulations (see State Rule Applicability section of TSD), each of the wood treating kilns (kilns K1 through K5) is subject to the requirements of 326 IAC 8-1-6, since they each have potential VOC emissions of greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8. Therefore, the Permittee is required to control VOC emissions from each of the kilns pursuant to the provisions of 326 IAC 8-1-6 (BACT). Below is a table that includes emission

units that have the potential to emit (PTE) volatile organic compounds (VOCs) and the associated uncontrolled PTE of VOCs.

<b>Emission Unit</b>	<b>Uncontrolled PTE of VOCs (tons/year)</b>
Wood treating kiln K1	232.0
Wood treating kiln K2	232.0
Wood treating kiln K3	232.0
Wood treating kiln K4	232.0
Wood treating kiln K5	232.0

### **BACT Description**

IDEM, OAQ conducts BACT analyses in accordance with the “*Top-Down*” *Best Available Control Technology* process, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below:

- (1) Identify all potentially available control options;
- (2) Eliminate technically infeasible control options;
- (3) Rank remaining control technologies by control effectiveness;
- (4) Evaluate the most effective controls and document the results as necessary; and
- (5) Select BACT.

In accordance with EPA guidance, the BACT analysis should take into account the energy, environmental, and economic impacts. Emission reductions may be achieved through the application of available control techniques, changes in process design, and/or operational limitations. This BACT determination is based on the following information:

- (a) The BACT analysis information submitted by Burkes Garden Wood Products on December 18, 2007; and
- (b) The EPA RACT/BACT/LAER Clearinghouse (RBLC) database for process type (30.800 - Wood Lumber Kilns);
- (c) Indiana state and local air quality permits.

### **VOC BACT Analysis**

#### **Step 1 – Identify All Potentially Available Control Options**

Based on the information reviewed for this BACT determination, the following potentially available control technologies were identified for controlling VOC emissions from each of the wood treating kilns (K1 through K5):

- (a) Combustion in a Boiler:

Combustion in a boiler is the process oxidizing organic contaminants in a waste gas stream within the combustion zone of a boiler for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The residence time, temperature, flow velocity and mixing, and the oxygen concentration in the combustion zone affect the oxidation rate and destruction efficiency.

Since a boiler is typically fired with a primary fuel (e.g., natural gas, fuel oil, wood, or coal), the boiler can handle fluctuations in a waste stream's VOC concentration, flow rate, and heat content and is appropriate for continuous, batch, and variable flow waste stream application. A boiler typically requires combustion of a primary fuel (e.g., natural gas, fuel oil, wood, or coal) to maintain the combustion zone temperature high enough to provide the necessary heating requirements for the primary process (e.g., steam production).

For this wood treating process, the boilers are designed to have combustion zone temperatures between 1,800 and 2,000°F (the required temperature range to treat the wood) and sufficient residence time, flow velocity and mixing, and the oxygen concentration to oxidize VOCs in a waste stream. Based on information provided by the source, the boilers for this wood treating process will achieve a VOC destruction efficiency of at least 99% on a consistent basis under normal operational conditions for the wood treating plant. Since the two boilers are part of the heat-treated lumber process design and have the primary function of drying/treating the lumber, the only additional capital costs associated with this control option are the costs of two fans and associated ductwork to route the kiln exhausts back to the boilers. Operating costs for this control option will only consist of the energy costs for operation of the fans and the routine maintenance costs for the fans and ductwork.

(b) Thermal Oxidizer:

Thermal oxidation is the process of oxidizing organic contaminants in a waste gas stream by raising the temperature above the autoignition point in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The residence time, temperature, flow velocity and mixing, and the oxygen concentration in the combustion chamber affect the oxidation rate and destruction efficiency. Thermal oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. Thermal oxidizers are typically designed to have a residence time of one second or less and combustion chamber temperatures between 1,200 and 2,000°F.

The three types of thermal oxidation systems include direct flame, recuperative, and regenerative thermal oxidizers, which are differentiated by the type of heat recovery equipment used. A direct flame thermal oxidizer consists of only a combustion chamber with no heat recovery equipment. In a recuperative thermal oxidizer, the waste gas stream is preheated using the heat content of the treated gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In a regenerative thermal oxidizer, a high-density media such as a packed ceramic bed, which was heated in a previous cycle, is used to preheat the incoming waste gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In general, thermal oxidizers are less efficient at treating waste gas streams with highly variable flowrates, since the variable flowrate results in varying residence times, combustion chamber temperature, and poor mixing. Based on information provided by the Environmental Protection Agency (EPA), thermal oxidizers are able to achieve VOC destruction efficiencies greater than 98% for VOC laden waste streams under certain operating conditions.

No information was found regarding typical VOC destruction efficiency for a thermal oxidizer controlling emissions from a wood treating kiln. However, based on information provided by the source, controlling VOC emissions with a thermal oxidizer would have higher capital and operating costs and lower destruction efficiency than with a boiler under normal operational conditions anticipated for this specific wood treating plant. Compared to combustion in a boiler, the thermal oxidizer option would have additional capital costs for buying and installing the thermal oxidizer, including site preparation and foundation costs, and additional operating costs for supplying fuel to the oxidizer.

(c) Catalytic Oxidizer:

Catalytic oxidation is the process of oxidizing organic contaminants in a waste gas stream within a heated chamber containing a catalyst bed in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The catalyst is used to lower the activation energy of the oxidation reaction. The residence time, temperature, flow velocity and mixing, the oxygen concentration, and type of catalyst used in the combustion chamber affect the oxidation rate and destruction efficiency. Catalytic oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. Catalytic oxidizers operate at lower temperatures and require less fuel than thermal oxidizers, they have a smaller footprint, and they need little or no insulation. Catalytic oxidizers are typically designed to have a residence time of 0.5 seconds or less and combustion chamber temperatures between 600 and 1,200°F. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic. Catalytic oxidation is most suited to systems with lower exhaust volumes, when there is little variation in the type and concentration of VOC, and where catalyst poisons or other fouling contaminants such as silicone, sulfur, heavy hydrocarbons and particulates are not present.

The two types of catalytic oxidation systems include recuperative and regenerative catalytic oxidizers, which are differentiated by the type of heat recovery equipment used. In a recuperative catalytic oxidizer, the waste gas stream is preheated using the heat content of the treated gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In a regenerative thermal oxidizer, a high-density media such as a packed ceramic bed, which was heated in a previous cycle, is used to preheat the incoming waste gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. Based on information provide by the Environmental Protection Agency (EPA), thermal oxidizer are able to achieve VOC destruction efficiencies greater than 98% for VOC laden waste streams under certain operating conditions.

No information was found regarding typical VOC destruction efficiency for a catalytic oxidizer controlling emissions from a wood treating kiln. However, based on information provided by the source, controlling VOC emissions with a catalytic oxidizer would be infeasible, because semi-volatile organic compounds in the waste stream would foul the catalyst surface and result in low destruction efficiency and high capital and operating costs for cleaning or replacing catalyst.

(d) Condensation Unit:

Condensation is the process by which the temperature of the waste gas stream is lowered to below the dew points of the contaminants gases in waste gas. A refrigeration condenser normally provides a VOC control efficiency greater than 90%.

No information was found regarding typical VOC destruction efficiency for a refrigeration condenser controlling emissions from a wood treating kiln. However, based on information provided by the source, controlling VOC emissions with a refrigeration condenser would be infeasible due to the high air temperatures and moisture content of the kiln steam exhaust and because semi-volatile organic compounds in the waste stream would foul the heat transfer surfaces and result in high operating costs for cleaning heat transfer surfaces.

(e) Carbon Adsorption Unit:

Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Carbon adsorption systems can operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air in order to desorb the

absorbate (VOC vapors) from the adsorbent and the adsorbate and regenerated adsorbent can be recovered for reuse or disposal. Non-regenerative systems require the removal of the spent adsorbent and replacement with fresh adsorbent.

No information was found regarding typical VOC destruction efficiency for a carbon adsorption unit controlling emissions from a wood treating kiln. However, based on information provided by the source, controlling VOC emissions with a carbon adsorption unit would be infeasible due to the high air temperatures and moisture content of the kiln steam exhaust and because semi-volatile organic compounds in the waste stream would foul the adsorption sites and result in high operating costs for replacing the carbon bed.

(f) Biofilter:

Biofiltration is a process in which a waste gas stream is passed through a bed of peat, compost, bark, soil, gravel, or other inorganic media in order to strip organic contaminant gases from the waste gas stream through the process of dissolution in the bed moisture and adsorption to the bed media. Under aerobic conditions, microorganisms naturally present in the bed oxidize the organic contaminant gases within the bed to carbon dioxide, water, and additional biomass through metabolic processes. Biofilters must be monitored for and maintained at optimum operating conditions in order to maintain the viability of the microorganisms in the biofilter and to maintain optimum operation and VOC control efficiency. Operational variables that must be determined and maintained include temperature, pH, moisture content, pollutant mix, pollutant concentration, macronutrient feeding, residence time, compacted bed media, and gas channeling. If the temperature of the waste gas stream is too high, the gas stream must be cooled to an optimum temperature before it can be treated in the biofilter. Based on information provide by the Environmental Protection Agency (EPA), biofilters are able to achieve VOC destruction efficiencies greater than 98% for waste streams containing readily degradable VOCs under optimum operating conditions.

No information was found regarding typical VOC destruction efficiency for a biofilter controlling emissions from a wood treating kiln. However, based on information provided by the source, controlling VOC emissions with a biofilter would be infeasible due to higher capital and operating costs associated with monitoring and maintaining optimum operating conditions and since it would have a lower destruction efficiency than with a boiler under normal operational conditions anticipated for this wood treating plant.

(g) Wet Packed Bed Scrubber:

A wet packed bed scrubber is an absorption system in which a waste gas stream is interacted with a scrubbing liquid inside a contact chamber containing a bed of packing media in order to strip contaminant gases from the waste gas stream through the process of dissolution. Water is the most commonly used scrubbing liquid. Other solvents may be used depending on the components of the waste gas stream. Based on information provide by the Environmental Protection Agency (EPA), most wet packed bed scrubbers are able to achieve VOC removal efficiencies greater than 90% for VOC laden waste streams under certain operating conditions. Since the VOC is not destroyed in the scrubber, additional pollution control would be necessary.

No information was found regarding typical VOC removal efficiency for a wet packed bed scrubber controlling emissions from a wood treating kiln. However, based on information provided by the source, controlling VOC emissions with a wet packed bed scrubber would be infeasible, since additional pollution control technologies to destroy VOC emissions would be required, resulting in higher capital and operating costs than with a boiler under normal operational conditions anticipated for this wood treating plant.

### **Step 2 – Eliminate Technically Infeasible Control Options**

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a catalytic oxidizer, refrigeration condenser, carbon adsorption unit, biofilter, and wet packed bed scrubber are not technically feasible options for this source for the following reasons:

- (a) The use of a catalytic oxidizer would be infeasible, because semi-volatile organic compounds in the waste stream would foul the catalyst surface and result in high capital and operating costs for cleaning or replacing catalyst.
- (b) The use of a refrigeration condenser would be infeasible due to the high air temperatures and moisture content of the kiln steam exhaust and because semi-volatile organic compounds in the waste stream would foul the heat transfer surfaces and result in high operating costs for cleaning heat transfer surfaces.
- (c) The use of a carbon adsorption unit would be infeasible due to the high air temperatures and moisture content of the kiln steam exhaust and because semi-volatile organic compounds in the waste stream would foul the adsorption sites and result in high operating costs for replacing the carbon bed.
- (d) The use of a biofilter would be infeasible due to higher capital and operating costs associated with monitoring and maintaining optimum operating conditions.
- (e) The use of a wet packed bed scrubber would be infeasible, since additional pollution control technologies to destroy VOC emissions would be required, resulting in higher capital and operating costs.

### **Step 3 – Rank Remaining Control Technologies by Control Effectiveness**

The remaining technically feasible options for controlling VOC emissions from each of the wood treating kilns (K1 through K5) are as follows (listed in descending order of most technically feasible):

<b>Control Technology</b>	<b>Control Efficiency (%)</b>
Combustion in a Boiler	99
Thermal Oxidizer	98

IDEM is aware that that the above control technologies may be able to periodically achieve control efficiencies that exceed the listed value under certain operating conditions. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has the discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that a greater control efficiency may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

#### **Step 4 – Evaluate the Most Effective Controls and Document Results**

EPA's RACT/BACT/LAER Clearinghouse (RBLC) under Process Type Code 30.800 (Wood Lumber Kilns) was reviewed to evaluate the remaining technically feasible options for controlling VOC emissions from each of the wood treating kilns (K1 through K5). The review identified 41 sources in the RBLC database containing either steam-heated or dry-air heated wood lumber kilns. None of the wood lumber kilns at the 41 sources required the use of a control device for destruction of VOC emissions. Of the 41 sources, the RBLC database indicated that 13 sources required either proper kiln design, proper kiln operating/maintenance/work practices, routine equipment inspections, and/or recordkeeping.

In addition, no Indiana state or local air quality permits issued to date were identified that required the use of a control device for destruction of VOC emissions from wood lumber kilns.

#### **Step 5 – Select BACT**

Since the source has proposed to use the most stringent BACT requirement (combustion of the VOC emissions generated by the kilns in one and/or two boilers), no further evaluation of the remaining technically feasible options (combustion in a boiler and thermal oxidizer) is required under the EPA's top-down BACT approach, and an economic, energy, or environmental impact analysis is not required as part of this BACT evaluation for these options.

IDEM, OAQ has determined that the following requirements represent BACT for each of the wood treating kilns (kilns K1 through K5) at the source:

- (a) The VOC emissions from the wood treating kilns K1 through K5 shall be controlled by boiler B1 and/or boiler B2.
- (b) The overall VOC control efficiency for each of the boilers (B1 and B2) (including the capture efficiency and destruction efficiency) shall be at least 99%.
- (c) The VOC emissions after control from each of the wood treating kilns (K1 through K5) shall not exceed 0.384 pounds of VOC per ton of wood input to each kiln.