



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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**Michael R. Pence**  
Governor

**Thomas W. Easterly**  
Commissioner

To: Interested Parties

Date: June 12, 2015

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

Source Name: Babcock Paving, Incorporated

Permit Level: Federally Enforceable State Operating Permit (FESOP)  
Significant Permit Revision

Permit Number: 073-35486-00041

Source Location: 6049 Work Street  
DeMotte, Indiana

Type of Action Taken: Modification at an existing source  
Revisions to permit requirements

## 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 matter referenced above.

The final decision is available on the IDEM website at: <http://www.in.gov/apps/idem/caats/>  
To view the document, select Search option 3, then enter permit 35486.

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

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

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.

*(continues on next page)*

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.



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Rodney Urbano  
Babcock Paving, Inc.  
6049 Work Street,  
DeMotte, IN, 46310-8821

June 12, 2015

Re: 073-35486-00041  
Significant Revision to  
F073-32549-00041

Dear Mr. Urbano:

Babcock Paving, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) Renewal No. F073-32549-00041 on April 8, 2013, for a stationary drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation, located at 6049 Work Street, Demotte, Indiana 46310. On February 20, 2015, the Office of Air Quality (OAQ) received an application from the source requesting the permit be revised to add a new moveable reclaimed asphalt pavement (RAP) crushing unit (including: feed hopper, crusher, screens, conveyors, and on-board diesel-fired generator), a radial stacking conveyor, and associated material storage piles, which will be dedicated to the site. The attached Technical Support Document (TSD) provides additional explanation of the changes to the source and permit. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions  
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit  
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval 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.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit.

All other conditions of the permit shall remain unchanged and in effect. Please find attached the entire FESOP as revised, including the following new attachments:

- Attachment D: 40 CFR 60, Subpart OOO, NSPS for Nonmetallic Mineral Processing Plants (*new*)
- Attachment E: 40 CFR 60, Subpart IIII, NSPS for Stationary Compression Ignition Internal Combustion Engines (*new*)

The permit references the below listed attachments. Since these attachments have been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of these attachments with this revision:

- Attachment A: Fugitive Dust Control Plan
- Attachment B: 40 CFR 60, Subpart I, NSPS for Hot Mix Asphalt Facilities
- Attachment C: 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines

Previously issued approvals for this source containing these attachments are available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: [http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl).

A copy of the permit is available on the Internet at <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21-5-3-5. If you have any questions on this matter, please contact Ms. Hannah Desrosiers, of my staff, at (317) 233-9327 or toll free at 1-800-451-6027 extension 3-9327.

Sincerely,



Nathan C. Bell, Section Chief  
Permits Branch  
Office of Air Quality

Attachments: Technical Support Document and revised permit

NB/hd

cc: File - Jasper County  
Jasper County Health Department  
U.S. EPA, Region V  
Compliance and Enforcement Branch



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Federally Enforceable State Operating Permit  
Renewal and New Source Review  
OFFICE OF AIR QUALITY

Babcock Paving, Inc.  
6049 Work Street  
DeMotte, Indiana 46310

(herein known as the Permittee) is hereby authorized to 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. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-8-11, applicable to those conditions

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. F073-32549-00041	
Issued by: Original Signed by: Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 8, 2013  Expiration Date: April 8, 2023

Administrative Amendment No. 073-34238-00041, issued May 5, 2014.

Significant Permit Revision No. 073-35486-00041	
Issued by:  Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: June 12, 2015  Expiration Date: April 8, 2023



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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). 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)]

---

The Permittee owns and operates a stationary drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation. Blast furnace slag, electric arc furnace steel mill slag, and/or asbestos-free recycled shingles are processed in the aggregate mix. Reclaimed asphalt pavement (RAP) and recycled concrete are crushed onsite. This source does not grind any kind of recycled asphalt shingles (RAS), asbestos-free or otherwise, on-site.

Source Address:	6049 Work Street, DeMotte, Indiana 46310
General Source Phone Number:	(219) 987-5450
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
County Location:	Jasper
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

### A.2 Emission Units and Pollution Control Equipment Summary [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) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, with a maximum throughput capacity of 225 tons of raw material per hour, processing blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 75 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, or waste oil, as available, and equipped with one (1) jet-pulse baghouse for particulate control, exhausting through stack S1.
- (b) Material handling and conveying operations, consisting of the following:
  - (1) One (1) aggregate storage area, constructed in 2008, with a maximum storage capacity of 50,000 tons, including:
    - (A) Sand storage piles, with a maximum anticipated pile size of 0.75 acres;
    - (B) Limestone storage piles, with a maximum anticipated pile size of 3.75 acres;
    - (C) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.25 acres;
    - (D) Gravel storage piles, with a maximum anticipated pile size of 0.75 acres;
    - (E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 2.00 acres; and

- (F) Recycled asphalt shingles (RAS) piles, with a maximum anticipated pile size of 0.62 acres.
  - (2) One (1) aggregate handling and transfer system, constructed in 2008, consisting of:
    - (A) One (1) cold feed system, consisting of five (5) compartments, each with a capacity of 30 (thirty) tons, for a total aggregate holding capacity of 150 tons;
    - (B) Three (3) feeder conveyors;
    - (C) One (1) screen deck; and
    - (D) One (1) aggregate bucket elevator;
  - (3) One (1) Recycled Asphalt Pavement (RAP) system, identified as RC1, constructed in 2008, consisting of one (1) RAP bin, one (1) shaker, and one (1) conveyor, with a maximum throughput capacity of 214 tons of RAP per hour;
  - (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) screening unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
    - (A) one (1) feeder bin;
    - (B) one (1) 30 foot feeder belt;
    - (C) One (1) screen deck; and
    - (D) Three (3) stacking conveyors;
- Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.
- (5) One (1) Tier 3, 450 HP, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:
    - (A) One (1) radial stacking conveyor;
    - (B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and
    - (C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

- (6) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and
- (7) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

Under 40 CFR 60, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt plant is considered an affected facility.

- (d) Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles.

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

This stationary source also includes the following insignificant activities:

- (a) One (1) hot oil heater, identified as EU-04, constructed in 2008, with a maximum heat input capacity of 1.25 million British thermal units per hour (MMBtu/hr), firing natural gas or No. 2 fuel as available, uncontrolled and exhausting through stack S4. [326 IAC 6-2]
- (b) Two (2) 25,000 gallon liquid asphalt storage tanks, identified as Tank A and Tank B, constructed in 2008, uncontrolled and exhausting to the atmosphere;
- (c) Two (2) 15,000 gallon fuel oil storage tanks, identified as Tank C and Tank D, constructed in 2008, uncontrolled and exhausting to the atmosphere;
- (d) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thousand (230,000) gallons per month;
- (e) One (1) 20.5 hp gasoline-fired, spark ignition, 4-stroke lean burn, portable maintenance welding unit, manufactured in 1995 and constructed in 1995, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

- (f) One (1) 8.0 hp gasoline-fired, spark ignition, portable emergency generator, identified as the "back-up" generator, manufactured in 1999 and constructed in 2000, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

- (g) Combustion source flame safety purging on startup;
- (h) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;
- (i) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (j) Filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.
- (k) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;

- (l) Cleaners and solvents characterized as follows:
  - (1) having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 °C (100 °F) or;
  - (2) having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20 °C (68 °F); the use of which for all cleaners and solvents combined does not exceed one hundred forty-five (145) gallons per twelve (12) months;
- (m) Portable containers used for the collection, storage, or disposal of materials provided the container capacity is equal to or less than forty-six hundredths (0.46) cubic meters (*121.5 gallons*) and the container is closed, except when the material is added or removed.
- (n) Closed loop heating and cooling systems;
- (o) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment; and
- (p) Paved and unpaved roads with limited public access [326 IAC 6-4, 326 IAC 6-5, 326 IAC 2-8]

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) to renew 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 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]**

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- (a) This permit, F073-32549-00041, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

### **B.3 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.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]**

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

### **B.5 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.6 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.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]**

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

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

- (a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:
- (1) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and
  - (2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) The Permittee may use the attached Certification Form, or its equivalent 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.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (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. All 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 and Enforcement Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (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 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 may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]**

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IDEM, OAQ 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.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]**

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(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

- (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.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
- (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
- (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The

PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

**B.12 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, 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 and Enforcement Branch), or  
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)  
Facsimile Number: 317-233-6865

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

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 a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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 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 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.

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to F073-32549-00041 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.14 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.15 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 a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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 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 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 at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

**B.16 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 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 a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

- (b) A timely renewal application is one that is:
- (1) Submitted at least 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 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 takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 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  
Permit Administration and Support Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251
- Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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.18 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) and (c) 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  
Permit Administration and Support Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
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)(1) and (c). 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 in the notices specified in 326 IAC 2-8-15(b)(1) and (c).

(b) Emission Trades [326 IAC 2-8-15(b)]

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(b).

(c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]

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.19 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.

**B.20 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, 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.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (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  
Permit Administration and Support Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
  
Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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.22 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 no later than 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 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.23 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 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

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

#### C.2 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) Pursuant to 326 IAC 2-2 (PSD), 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.

(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.3 Opacity [326 IAC 5-1]

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

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

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

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

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

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

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

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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.7 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 attached plan as in Attachment A.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

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- (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 demolitions start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Compliance and Enforcement Branch, Office of Air Quality

100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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 Licensed Asbestos Inspector**  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

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

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

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- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:  
  
Indiana Department of Environmental Management  
Compliance and Enforcement Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
  
no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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 a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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 not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

## **Compliance Requirements [326 IAC 2-1.1-11]**

### **C.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)]**

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(a) For new units:

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance 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 and Enforcement Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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 a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

### **C.12 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. The analog instrument shall be capable of measuring values outside of the normal range.

(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.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]**

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

### **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 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]**

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

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

### **C.16 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 submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

- (b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) 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.17 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.
  - (1) Support information includes the following, where applicable:
    - (A) All calibration and maintenance records.
    - (B) All original strip chart recordings for continuous monitoring instrumentation.
    - (C) Copies of all reports required by the FESOP.
  - (2) Records of required monitoring information include the following, where applicable:
    - (A) The date, place, as defined in this permit, and time of sampling or measurements.
    - (B) The dates analyses were performed.
    - (C) The company or entity that performed the analyses.
    - (D) The analytical techniques or methods used.
    - (E) The results of such analyses.
    - (F) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

- (b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of

permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

**C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]**

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- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that 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. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.
  
- (b) The address for report submittal is:  
  
Indiana Department of Environmental Management  
Compliance and Enforcement Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251
  
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
  
- (d) 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.19 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 applicable standards for recycling and emissions reduction.

## SECTION D.1

## EMISSIONS UNIT OPERATION CONDITIONS

### **Emissions Unit Description:** Hot-Mix Asphalt (HMA) Plant, RAP Screener, and Hot Oil Heater (HOH)

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, with a maximum throughput capacity of 225 tons of raw material per hour, processing blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 75 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, or waste oil, as available, and equipped with one (1) jet-pulse baghouse for particulate control, exhausting through stack S1.
- (b) Material handling and conveying operations, consisting of the following:
  - (1) One (1) aggregate storage area, constructed in 2008, with a maximum storage capacity of 50,000 tons, including:
    - (A) Sand storage piles, with a maximum anticipated pile size of 0.75 acres;
    - (B) Limestone storage piles, with a maximum anticipated pile size of 3.75 acres;
    - (C) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.25 acres;
    - (D) Gravel storage piles, with a maximum anticipated pile size of 0.75 acres;
    - (E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 2.00 acres; and
    - (F) Recycled asphalt shingles (RAS) piles, with a maximum anticipated pile size of 0.62 acres.
  - (2) One (1) aggregate handling and transfer system, constructed in 2008, consisting of:
    - (A) One (1) cold feed system, consisting of five (5) compartments, each with a capacity of 30 (thirty) tons, for a total aggregate holding capacity of 150 tons;
    - (B) Three (3) feeder conveyors;
    - (C) One (1) screen deck; and
    - (D) One (1) aggregate bucket elevator;
  - (3) One (1) Recycled Asphalt Pavement (RAP) system, identified as RC1, constructed in 2008, consisting of one (1) RAP bin, one (1) shaker, and one (1) conveyor, with a maximum throughput capacity of 214 tons of RAP per hour;
  - (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) screening unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
    - (A) one (1) feeder bin;
    - (B) one (1) 30 foot feeder belt;

(C) One (1) screen deck; and

(D) Three (3) stacking conveyors;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:

(A) One (1) radial stacking conveyor;

(B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and

(C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

(6) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and

(7) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

Under 40 CFR 60, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt plant is considered an affected facility.

#### **Insignificant Activities**

(a) One (1) hot oil heater, identified as EU-04, constructed in 2008, with a maximum heat input capacity of 1.25 million British thermal units per hour (MMBtu/hr), firing natural gas or No. 2 fuel as available, uncontrolled and exhausting through stack S4. [326 IAC 6-2]

(p) Paved and unpaved roads with limited public access [326 IAC 6-4, 326 IAC 6-5, 326 IAC 2-8]

(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 PSD Minor Limit: PM [326 IAC 2-2]**

In order to render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;

(a) The amount of hot-mix asphalt processed shall not exceed 850,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

- (b) PM emissions from the dryer/mixer shall not exceed 0.380 pounds per ton of asphalt processed;
- (c) The Permittee shall control PM emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit;
- (d) The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and
- (e) PM emissions from crushing unit CR1 shall not exceed 0.0054 pounds per ton of material processed.

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.2 FESOP & PSD Minor Limits: PM10, PM2.5, SO2, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2]  
[326 IAC 8-1-6]

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Pursuant to 326 IAC 2-8-4, and in order to render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

- (a) The amount of hot-mix asphalt processed shall not exceed 850,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM10 emissions from the dryer/mixer shall not exceed 0.160 pounds per ton of asphalt processed.
- (c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.179 pounds per ton of asphalt processed.
- (d) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.
- (e) CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.
- (f) The Permittee shall control PM10 and PM2.5 emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.
- (g) The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (h) PM10 emissions from crushing unit CR1 shall not exceed 0.0024 pounds per ton of material processed; and
- (i) PM2.5 emissions from crushing unit CR1 shall not exceed 0.0024 pounds per ton of material processed.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, SO2, VOC, and CO to less than 100 tons per 12 consecutive month period, each,

and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Additionally, compliance with the limit in Condition D.1.2(d) shall limit the VOC emissions from the dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

D.1.3 FESOP & PSD Minor Limits: SO<sub>2</sub>, NO<sub>x</sub>, and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable, the Permittee shall comply with the following:

(a) Fuel and Slag Specifications

- (1) The sulfur content of the No. 2 fuel oil, and the #2 diesel fuel, each, shall not exceed 0.50% by weight.
- (2) The sulfur content of the No. 4 fuel oil shall not exceed 0.50% by weight.
- (3) The sulfur content of the waste fuel oil shall not exceed 0.75% by weight.
- (4) The waste oil combusted shall not contain more than 0.947% ash, 0.200% chlorine, and 0.0089% lead.
- (5) The HCl emissions shall not exceed 0.0132 pounds of HCl per gallon of waste oil burned.
- (6) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.
- (7) The SO<sub>2</sub> emissions from the blast furnace slag processed in the dryer/mixer shall not exceed 0.740 pounds per ton of blast furnace slag input.
- (8) The sulfur content of the steel slag shall not exceed 0.66% by weight.
- (9) The SO<sub>2</sub> emissions from the steel slag processed in the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag input.

(b) Single Fuel and Slag Usage Limitations:

- (1) When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, the usage of fuel shall be limited as follows:
  - (A) Natural gas usage shall not exceed 657 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month;
  - (B) No. 2 fuel oil usage shall not exceed 1,987,496 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
  - (C) No. 4 fuel oil usage shall not exceed 1,881,497 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(D) Waste oil usage shall not exceed 1,279,930 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) Blast furnace slag usage in the dryer/mixer shall not exceed 50,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

(3) Diesel fuel usage in the RAP screening unit (RC2) and crushing unit (CR1), combined, shall not exceed 200,000 gallons per consecutive twelve (12) month period, with compliance determined at the end of each month.

Note: The source is only permitted to burn the above-listed fuels in the associated emission units.

(c) Multiple Fuel and Slag Usage Limitations:

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, and diesel fuel usage in the RAP screening unit (RC2) and crushing unit (CR1), combined emissions from the dryer/mixer, RAP screening unit (RC2), and crushing unit (CR1), shall be limited as follows:

(1) SO<sub>2</sub> emissions shall not exceed 93.07 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) NO<sub>x</sub> emissions shall not exceed 93.50 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

(3) HCl emissions shall not exceed 8.45 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) Asphalt Shingle Usage Limitation

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use certified asbestos-free recycled shingles, post-consumer waste and/or factory seconds, as an additive in its aggregate mix.

Compliance with these limits, combined with the potential to emit SO<sub>2</sub>, NO<sub>x</sub>, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO<sub>2</sub> and NO<sub>x</sub> to less than 100 tons per twelve (12) consecutive month period, each, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

D.1.4 Particulate Emission Limits [326 IAC 6-2]

Pursuant to 326 IAC 6-2-4, the particulate emissions from the hot oil heater, identified as EU-04, shall not exceed six tenths (0.6) pounds of particulate matter per MMBtu heat input.

D.1.5 Particulate Emission Limits for Manufacturing Processes [326 IAC 6-3]

Pursuant to 326 IAC 6-3-2(e), particulate emissions from the crushing unit, identified as CR1, and associated screening operations, shall each not exceed 55.09 pounds per hour when operating at a process weight rate of 145 tons per hour (or 290,000 pounds/hr).

The pounds per hour limitations were calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

**D.1.6 Sulfur Dioxide (SO<sub>2</sub>) [326 IAC 7-1.1-1] [326 IAC 7-2-1]**

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(a) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), the Permittee shall comply with the following:

- (1) The sulfur dioxide (SO<sub>2</sub>) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per MMBtu when using distillate oil.
- (2) The sulfur dioxide (SO<sub>2</sub>) emissions from the dryer/mixer burner shall not exceed one and six tenths (1.6) pounds per MMBtu heat input when using residual oil.

Note: No. 2 fuel oil and No. 4 fuel oil are each considered distillate oils, and waste oil is considered residual oil.

(b) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

**D.1.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

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A Preventive Maintenance Plan is required for these facilities and any corresponding control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

**D.1.8 Particulate Control (PM/PM10/PM2.5)**

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(a) In order to comply with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

**D.1.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]**

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In order to demonstrate compliance with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the Permittee shall perform PM, PM10, and PM2.5 testing of the dryer/mixer not later than five (5) years from the most recent valid compliance demonstration, utilizing methods approved by the Commissioner. These tests 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 the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable particulate matter.

#### D.1.10 Sulfur Dioxide (SO<sub>2</sub>) Emissions and Sulfur Content

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##### ***Fuel Oil***

- (a) Compliance with the fuel limitations established in Conditions D.1.3(a)(1), D.1.3(a)(2), D.1.3(a)(3), D.1.6(a), and D.1.6(b) shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), and 326 IAC 3-7-4 (Fuel oil sampling; analysis methods), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
  - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
    - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
    - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
  - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 75.0 MMBtu/hr dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to any of the methods specified in (1) or (2) above shall not be refuted by evidence of compliance pursuant to the other method.

##### ***Blast Furnace Slag***

- (b) Compliance with the blast furnace slag limitations established in Conditions D.1.3(a)(6) and D.1.3(a)(7) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of Blast Furnace slag delivered; or
  - (2) Analyzing a sample of each blast furnace slag delivery, if no vendor analyses or certifications are available, to determine the sulfur content of the Blast Furnace slag, 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.
  - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 75.0 MMBtu/hr dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

A determination of noncompliance pursuant to any of the methods specified in (1) or (2) above shall not be refuted by evidence of compliance pursuant to the other method.

### **Steel Slag**

- (c) Compliance with the steel slag limitations established in Conditions D.1.3(a)(8) and D.1.3(a)(9) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of slag delivered; or
  - (2) Analyzing a sample of the Steel slag delivery if no vendor analyses or certifications are available, at least once per quarter, to determine the sulfur content of the Steel slag, 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.
  - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 75.0 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

A determination of noncompliance pursuant to any of the methods specified in (1) or (2) above shall not be refuted by evidence of compliance pursuant to the other method.

#### D.1.11 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content

The Permittee shall demonstrate compliance with the waste oil ash, chlorine, and lead content limits established in Condition D.1.3(a)(4), by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

#### D.1.12 Multiple Fuel and Slag Usage Limitations

In order to comply with the Condition D.1.3(c), when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, and diesel fuel in the RAP screening unit (RC2) and crushing unit (CR1), the Permittee shall limit fuel and slag usage according to the following formulas:

(a) Sulfur Dioxide (SO<sub>2</sub>) Emission Calculation

$$S = \frac{G(E_G) + O(E_O) + F(E_F) + W(E_W) + B(E_B) + T(E_T) + D(E_D)}{2,000 \text{ lbs/ton}}$$

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period  
G = million cubic feet of natural gas used in the dryer/mixer burner in the last 12 months  
O = gallons of No. 2 fuel oil used in the dryer/mixer burner in the last 12 months  
F = gallons of No. 4 fuel oil used in the dryer/mixer burner in the last 12 months  
W = gallons of waste oil used in the dryer/mixer burner in the last 12 months  
B = tons of blast furnace slag used in dryer/mixer in the the last 12 months  
T = tons of steel slag used in the dryer/mixer in the last 12 months  
D = gallons of #2 diesel fuel used in the RAP screening unit (RC2) and crushing unit (CR1), combined, in the last 12 months  
E<sub>G</sub> = 0.6 lbs/MMCF of natural gas  
E<sub>O</sub> = 0.071 lbs/gallon of No. 2 fuel oil  
E<sub>F</sub> = 0.075 lbs/gallon of No. 4 fuel oil  
E<sub>W</sub> = 0.1103 lbs/gallon of waste oil  
E<sub>B</sub> = 0.74 lbs/ton of blast furnace slag input  
E<sub>T</sub> = 0.0014 lbs/ton of steel slag input  
E<sub>D</sub> = 0.0401 lbs/gallon of diesel fuel

(b) Nitrogen Oxides (NO<sub>x</sub>) Emission Calculation

$$N = \frac{G(E_G) + O(E_O) + F(E_F) + W(E_W) + D(E_D)}{2,000 \text{ lbs/ton}}$$

N = tons of nitrogen oxide emissions for a 12-month consecutive period  
G = million cubic feet of natural gas used in the dryer/mixer burner in the last 12 months  
O = gallons of No. 2 fuel oil used in the dryer/mixer burner in the last 12 months  
F = gallons of No. 4 fuel oil used in the dryer/mixer burner in the last 12 months  
W = gallons of waste oil used in the dryer/mixer burner in the last 12 months  
D = gallons of #2 diesel fuel used in the RAP screening unit (RC2) and crushing unit (CR1), combined, in the last 12 months  
E<sub>G</sub> = 100 lbs/MMCF of natural gas  
E<sub>O</sub> = 0.020 lbs/gallon of No. 2 fuel oil  
E<sub>F</sub> = 0.020 lbs/gallon of No. 4 fuel oil  
E<sub>W</sub> = 0.019 lbs/gallon of waste oil  
E<sub>D</sub> = 0.607 lbs/gallon of diesel fuel

(c) Hydrogen Chloride (HCl) Emission Calculation:

$$HCl = \frac{W(E_W)}{2000 \text{ lbs/ton}}$$

where:

HCl = tons of hydrogen chloride emissions for a 12-month consecutive period  
W = gallons of waste oil used in the last 12 months.  
E<sub>W</sub> = 0.0132 lbs/gallon of waste oil.

D.1.13 Shingle Asbestos Content

Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.3(d) shall be determined utilizing one of the following options:

- (1) Providing shingle supplier certification that the factory seconds and/or post consumer waste shingles do not contain asbestos; or
- (2) Analyzing a sample of the recycled asphalt shingles (factory seconds and/or post consumer waste, only) delivery to determine the asbestos content of the recycled asphalt shingles, 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 determination of noncompliance pursuant to any of the methods specified above shall not be refuted by evidence of compliance pursuant to the other method.

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

D.1.14 Visible Emissions Notations

- (a) Visible emission notations of the conveyors, screens, material transfer points, and the dryer/mixer stack (S1) exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) Visible emission notations of the crushing unit (CR1) and associated conveyors, screens, and material transfer points, shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (c) 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.

- (d) 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.
- (e) 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.
- (f) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. An abnormal visible emission notation is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

#### D.1.15 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer, at least once per day when the dryer/mixer is in operation. When, for any one reading, the pressure drop across the baghouse is outside of the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between three (3.0) and six (6.0) inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

#### D.1.16 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces, or triboflows.

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

#### D.1.17 Record Keeping Requirements

- (a) To document the compliance status with Conditions D.1.1(a), and D.1.2(a), the Permittee shall keep monthly records of the amount of asphalt processed through the dryer/mixer.

- (b) To document the compliance status with Conditions D.1.3, D.1.6, D.1.10, D.1.11, D.1.12, and D.1.13, the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.3, D.1.6, D.1.10, D.1.11, D.1.12, and D.1.13.
- (1) Calendar dates covered in the compliance determination period;
  - (2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide (SO<sub>2</sub>) emission rates for each fuel used at the source since the last compliance determination period;
  - (3) Actual waste oil usage, ash, chlorine, and lead content, and equivalent hydrogen chloride (HCl) emission rate for waste oil used at the source since the last compliance determination period;
  - (4) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
  - (5) If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
    - (A) Fuel supplier certifications;
    - (B) The name of the fuel supplier; and
    - (C) A statement from the fuel supplier that certifies the sulfur content of the No. 2 fuel oil, the No. 4 fuel oil, the waste oil, and the diesel fuel, and the ash, chlorine, and lead content of the waste oil.
  - (6) Actual blast furnace and steel slag usage, sulfur content, and equivalent sulfur dioxide emission rates for all blast furnace and steel slag used at the source since the last compliance determination period;
  - (7) A certification, signed by the owner or operator, that the records of the blast furnace and steel slag supplier certifications represent all of the blast furnace and steel slag used during the period; and
  - (8) If the slag supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
    - (A) Blast furnace and steel slag supplier certifications;
    - (B) The name of the blast furnace and steel slag supplier; and
    - (C) A statement from the blast furnace and steel slag supplier that certifies the sulfur content of the blast furnace and steel slag.
  - (9) A certification, signed by the owner or operator, that the records of the shingle supplier certifications represent all of the shingles used during the period; and
  - (10) If the shingle supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
    - (A) Shingle supplier certifications;
    - (B) The name of the shingle supplier(s); and

- (C) A statement from the shingle supplier(s) that certifies the asbestos content of the shingles from their company.
- (d) To document the compliance status with Condition D.1.14(a), the Permittee shall maintain records of visible emission notations of the conveyors, screens, material transfer points, and dryer/mixer stack (S1) exhaust 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 process did not operate that day).
- (e) To document the compliance status with Condition D.1.14(b), the Permittee shall maintain records of visible emission notations of the crushing unit (CR1) and associated conveyors, screens, and material transfer points 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 process did not operate that day).
- (f) To document the compliance status with Condition D.1.15, the Permittee shall maintain records once per day of the pressure drop during normal operation. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).
- (g) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

#### D.1.18 Reporting Requirements

Quarterly summaries of the information to document compliance status with Conditions D.1.1(a), D.1.2(a), D.1.3, and D.1.12 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### **Emissions Unit Description:** Cold-mix Asphalt (CMA) Production & Storage

(c) Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles.

(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.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-5-2]

Pursuant to 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving), the use of cutback asphalt or asphalt emulsion shall not contain more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:

- (a) Penetrating prime coating
- (b) Stockpile storage
- (c) Application during the months of November, December, January, February, and March.

#### D.2.2 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable, the Permittee shall comply with the following:

- (a) VOC emissions from the sum of the liquid binders (cutback asphalt and/or asphalt emulsions) shall not exceed 52.50 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) Liquid binders used in the production of cold mix asphalt shall be defined as follows:
  - (1) Cut back asphalt rapid cure, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95.0% by weight of VOC solvent evaporating.
  - (2) Cut back asphalt medium cure, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70.0% by weight of VOC solvent evaporating.
  - (3) Cut back asphalt slow cure, containing a maximum of 20.0% of the liquid binder by weight of VOC solvent and 25.0% by weight of VOC solvent evaporating.
  - (4) Emulsified asphalt with solvent, containing a maximum of 15.0% of liquid binder by weight of VOC solvent and 46.4% by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume.
  - (5) Other asphalt with solvent binder, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating.

- (c) When using only one type of liquid binder (asphalt emulsion) per twelve (12) consecutive month period, the usage of liquid binder shall be limited as follows:
- (1) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 55.26 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
  - (2) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 75.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
  - (3) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 210.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
  - (4) The amount of VOC solvent used in emulsified asphalt shall not exceed 113.15 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
  - (5) The amount of VOC solvent used in all other asphalt shall not exceed 2,100.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (d) When using more than one liquid binder (asphalt emulsion) per twelve (12) consecutive month period, VOC emissions shall be limited as follows:
- (1) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows.

$$\text{VOC emitted (tons/yr)} = \frac{\text{VOC solvent used for each binder (tons/yr)}}{\text{Adjustment Factor}}$$

Type of Binder	Adjustment Factor
Cutback Asphalt Rapid Cure	1.053
Cutback Asphalt Medium Cure	1.429
Cutback Asphalt Slow Cure	4.000
Emulsified Asphalt	2.155
Other Asphalt	40.0

Compliance with these limits, combined with the potential to emit VOCs and HAPs from all other emission units at this source, will limit source-wide VOC emissions to less than one hundred (100) tons per twelve (12) consecutive month period, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

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

### **D.2.3 Record Keeping Requirements**

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- (a) To document the compliance status with Condition D.2.2, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.2.
- (1) Calendar dates covered in the compliance determination period;
  - (2) Actual asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;
  - (3) Actual VOC solvent content by weight of the asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and
  - (4) Actual amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.

Records may include delivery tickets, manufacturer's data, material safety data sheets (MSDS), and other documents necessary to verify the type and amount used. Test results of ASTM tests for asphalt cutback and asphalt emulsion may be used to document volatilization.

- (b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

### **D.2.4 Reporting Requirements**

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A quarterly summary of the information to document the compliance status with Condition D.2.2 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION E.1

## NSPS REQUIREMENTS

### Emissions Unit Description: Hot-Mix Asphalt (HMA) Plant

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, with a maximum throughput capacity of 225 tons of raw material per hour, processing blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 75 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, or waste oil, as available, and equipped with one (1) jet-pulse baghouse for particulate control, exhausting through stack S1.
- (b) Material handling and conveying operations, consisting of the following:
  - (1) One (1) aggregate storage area, constructed in 2008, with a maximum storage capacity of 50,000 tons, including:
    - (A) Sand storage piles, with a maximum anticipated pile size of 0.75 acres;
    - (B) Limestone storage piles, with a maximum anticipated pile size of 3.75 acres;
    - (C) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.25 acres;
    - (D) Gravel storage piles, with a maximum anticipated pile size of 0.75 acres;
    - (E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 2.00 acres; and
    - (F) Recycled asphalt shingles (RAS) piles, with a maximum anticipated pile size of 0.62 acres.
  - (2) One (1) aggregate handling and transfer system, constructed in 2008, consisting of:
    - (A) One (1) cold feed system, consisting of five (5) compartments, each with a capacity of 30 (thirty) tons, for a total aggregate holding capacity of 150 tons;
    - (B) Three (3) feeder conveyors;
    - (C) One (1) screen deck; and
    - (D) One (1) aggregate bucket elevator;
  - (3) One (1) Recycled Asphalt Pavement (RAP) system, identified as RC1, constructed in 2008, consisting of one (1) RAP bin, one (1) shaker, and one (1) conveyor, with a maximum throughput capacity of 214 tons of RAP per hour;
  - (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) Screening Unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
    - (A) one (1) feeder bin;
    - (B) one (1) 30 foot feeder belt;
    - (C) One (1) screen deck; and

(D) Three (3) stacking conveyors;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:

(A) One (1) radial stacking conveyor;

(B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and

(C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

(6) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and

(7) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

Under 40 CFR 60, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt plant is considered an affected facility.

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

### **New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]**

#### **E.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 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, except as otherwise specified in 40 CFR 60, Subpart I.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.1.2 New Source Performance Standards (NSPS) for Hot-mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12]

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The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart I (included as Attachment B of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart I:

- (a) 40 CFR 60.90
- (b) 40 CFR 60.91
- (c) 40 CFR 60.92
- (d) 40 CFR 60.93

E.1.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

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Not later than five (5) years from the most recent compliant stack test, in order to demonstrate compliance with Condition E.1.2, the Permittee shall perform the stack testing required under NSPS 40 CFR 60, Subpart I, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

## SECTION E.2

## NESHAP REQUIREMENTS

### Emissions Unit Description [326 IAC 2-8-4(10)]: Generators

(b) Material handling and conveying operations, consisting of the following:

(4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) Screening Unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:

- (A) one (1) feeder bin;
- (B) one (1) 30 foot feeder belt;
- (C) One (1) screen deck; and
- (D) Three (3) stacking conveyors;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:

- (A) One (1) radial stacking conveyor;
- (B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and
- (C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

### Insignificant Activities

(e) One (1) 20 hp gasoline-fired, spark ignition, 4-stroke lean burn, portable maintenance welding unit, manufactured in 1995 and constructed in 1995, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(f) One (1) 8 hp gasoline-fired, spark ignition, portable emergency generator, identified as the "back-up" generator, manufactured in 1999 and constructed in 2000, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

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

**National Emission Standards for Hazardous Air Pollutants (NESHAPs) Requirements [326 IAC 2-8-4(1)]**

**E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]**

(a) Pursuant to 40 CFR 63.6665, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the source, as specified in Table 8 of 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.12, the Permittee shall submit all required notifications and reports to:

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

**E.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) [40 CFR 63, Subpart ZZZZ] [326 IAC 20-82]**

Pursuant to 40 CFR Part 60, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart ZZZZ (4Z) (included as Attachment C), which are incorporated by reference as 326 IAC 20-82, for the following generators:

(a) One (1) 100.0 hp diesel fuel-fired, portable RAP Screening Unit, identified as RC2, with a compliance date of May 3, 2013, as follows:

- |   |                                       |
|---|---------------------------------------|
| (1) 40 CFR 63.6580;                     | (8) 40 CFR 63.6640;                   |
| (2) 40 CFR 63.6585(a), (c), (d);        | (9) 40 CFR 63.6655(a), (b), (d), (e); |
| (3) 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) 40 CFR 63.6660                   |
| (4) 40 CFR 63.6595(a)(1), (b), (c);     | (11) 40 CFR 63.6665                   |
| (5) 40 CFR 63.6603(a);                  | (12) 40 CFR 63.6670                   |
| (6) 40 CFR 63.6605;                     | (13) 40 CFR 63.6675                   |
| (7) 40 CFR 63.6625(e)(4), (h), (i);     | (14) Tables 2d and 8.                 |

(b) One (1) Tier 3,450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, with compliance due upon start-up, as follows:

- |   |                         |
|---|-------------------------|
| (A) 40 CFR 63.6580;                       | (E) 40 CFR 63.6665;     |
| (B) 40 CFR 63.6585;                       | (F) 40 CFR 63.6670; and |
| (C) 40 CFR 63.6590(a)(2)(iii) and (c)(1); | (G) 40 CFR 63.6675.     |
| (D) 40 CFR 63.6595(a)(7);                 |                         |

(c) One (1) 20 hp gasoline-fired spark ignition, 4-stroke lean burn, portable maintenance welding unit, with a compliance date of October 19, 2013, as follows:

- |     |                                     |      |                                   |
|-----|-------------------------------------|------|-----------------------------------|
| (1) | 40 CFR 63.6580;                     | (8)  | 40 CFR 63.6640;                   |
| (2) | 40 CFR 63.6585(a), (c), (d);        | (9)  | 40 CFR 63.6655(a), (b), (d), (e); |
| (3) | 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) | 40 CFR 63.6660                    |
| (4) | 40 CFR 63.6595(a)(1), (b), (c);     | (11) | 40 CFR 63.6665                    |
| (5) | 40 CFR 63.6603(a);                  | (12) | 40 CFR 63.6670                    |
| (6) | 40 CFR 63.6605;                     | (13) | 40 CFR 63.6675                    |
| (7) | 40 CFR 63.6625(e)(7), (h), (j);     | (14) | Tables 2d, 6, and 8.              |

(d) One (1) 8 hp gasoline-fired, spark ignition, portable emergency generator, with a compliance date of October 19, 2013, as follows:

- |     |                                      |      |  |
|-----|--------------------------------------|------|--|
| (1) | 40 CFR 63.6580;                      | (8)  | 40 CFR 63.6640;                        |
| (2) | 40 CFR 63.6585(a), (c), (d);         | (9)  | 40 CFR 63.6655(a), (b), (d), (e), (f); |
| (3) | 40 CFR 63.6590(a)(1)(iii) and (iv);  | (10) | 40 CFR 63.6660                         |
| (4) | 40 CFR 63.6595(a)(1), (b), (c);      | (11) | 40 CFR 63.6665                         |
| (5) | 40 CFR 63.6603(a);                   | (12) | 40 CFR 63.6670                         |
| (6) | 40 CFR 63.6605;                      | (13) | 40 CFR 63.6675                         |
| (7) | 40 CFR 63.6625(e)(3), (f), (h), (j); | (14) | Tables 2d, 6, and 8.                   |

### SECTION E.3

### NSPS REQUIREMENTS

**Emissions Unit Description:** Crushing Unit (CR1)

(b) Material handling and conveying operations, consisting of the following:

(5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:

(A) One (1) radial stacking conveyor;

(B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and

(C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

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

#### New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]

E.3.1 General Provisions Relating to New Source Performance Standards (NSPS) [326 IAC 12]  
[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, except as otherwise specified in 40 CFR 60, Subpart OOO.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.3.2 Standards of Performance for Nonmetallic Mineral Processing Plants (NSPS) [326 IAC 12]  
[40 CFR Part 60, Subpart OOO]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart OOO (included as Attachment D of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart OOO:

- (a) 40 CFR 60.670
- (b) 40 CFR 60.671
- (c) 40 CFR 60.672
- (d) 40 CFR 60.673

- (e) 40 CFR 60.674
- (f) 40 CFR 60.675
- (g) 40 CFR 60.676
- (h) Tables 1 - 3

## SECTION E.4

## NSPS REQUIREMENTS

### Emissions Unit Description: Generators

(b) Material handling and conveying operations, consisting of the following:

(5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:

(A) One (1) radial stacking conveyor;

(B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and

(C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

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

### New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]

E.4.1 General Provisions Relating to New Source Performance Standards (NSPS) [326 IAC 12]  
[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, as specified in Table 8 of 40 CFR Part 60, Subpart IIII, except as otherwise specified in 40 CFR 60, Subpart IIII.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.4.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS) [326 IAC 12] [40 CFR Part 60, Subpart IIII]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart IIII (included as Attachment E of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart IIII:

- |     |                         |     |                              |
|-----|-------------------------|-----|------------------------------|
| (a) | 40 CFR 60.4200;         | (g) | 40 CFR 60.4211(a), (c), (g); |
| (b) | 40 CFR 60.4204(b), (d); | (h) | 40 CFR 60.4212;              |
| (c) | 40 CFR 60.4206;         | (i) | 40 CFR 60.4214(c);           |
| (d) | 40 CFR 60.4207(a), (b); | (j) | 40 CFR 60.4218;              |
| (e) | 40 CFR 60.4208(a), (e); | (k) | 40 CFR 60.4219;              |
| (f) | 40 CFR 60.4209(b);      | (l) | Tables 5 & 8.                |

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF AIR QUALITY**  
**COMPLIANCE AND ENFORCEMENT BRANCH**  
**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)**  
**CERTIFICATION**

Source Name: Babcock Paving, Inc.  
Source Address: 6049 Work Street, DeMotte, Indiana 46310  
FESOP Permit No.: F073-32549-00041

**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 AND ENFORCEMENT BRANCH**  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
Phone: (317) 233-0178  
Fax: (317) 233-6865

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

Source Name: Babcock Paving, Inc.  
Source Address: 6049 Work Street, DeMotte, Indiana 46310  
FESOP Permit No.: F073-32549-00041

**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: \_\_\_\_\_

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

Source Name: Babcock Paving, Inc.  
Source Address: 6049 Work Street, Demotte, Indiana 46310  
FESOP Permit No.: F073-32549-00041  
Facility: Dryer/Mixer  
Parameter: **Hot-mix Asphalt Production**  
Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 850,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	Hot-mix Asphalt Produced This Month (tons)	Hot-mix Asphalt Produced Previous 11 Months (tons)	12 Month Total Hot-mix Asphalt Produced (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

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

Source Name: Babcock Paving, Inc.  
Source Address: 6049 Work Street, Demotte, Indiana 46310  
FESOP Permit No.: F073-32549-00041  
Facility: Crushing Unit CR1  
Parameter: **Maximum Material Throughput**  
Limit: The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	Material Throughput This Month (tons)	Material Throughput Previous 11 Months (tons)	12 Month Total Material Throughput (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

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

**FESOP QUARTERLY REPORT**

Page 1 of 3

Source Name: Babcock Paving, Inc.  
 Source Address: 6049 Work Street, Demotte, Indiana 46310  
 FESOP Permit No.: F073-32549-00041  
 Facility: Dryer/Mixer  
 Parameter: **Fuel & Slag Usage / SO<sub>2</sub>, NO<sub>x</sub>, & HCl emissions**  
 Emission Limits:

Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 93.07 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(a).  
Nitrogen Oxide (NO<sub>x</sub>) emissions shall not exceed 93.50 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(b).  
Hydrogen Chloride (HCl) emissions shall not exceed 8.45 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(c).

Fuel & Slag Limits: When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, fuel and slag usage shall not exceed the following:

Fuel Type (Units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	657
No. 2 Fuel Oil (gallons)	1,987,496
No. 4 Fuel Oil (gallons)	1,881,497
Waste Oil (gallons)	1,279,930
Blast Furnace Slag (tons)	50,000
Diesel Fuel (gallons)	200,000

Facility: Cold-mix Asphalt Production  
 Parameter: **Liquid Binder Usage / VOC Emissions**

Emission Limits: Volatile Organic Compound (VOC) emissions from the sum of the liquid binders shall not exceed 52.50 tons per twelve (12) consecutive month period with compliance determined at the end of each month, using the equation found in Condition D.2.2(d).

Binder Limits: When using only one type of liquid binder (asphalt emulsion) per twelve (12) consecutive month period in the production of cold-mix asphalt, liquid binder (asphalt emulsion) usage shall not exceed the following:

Type of Liquid Binder	Liquid Binder Usage Limit (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	55.26
Cutback Asphalt Medium Cure	75.00
Cutback Asphalt Slow Cure	210.00
Emulsified Asphalt	113.15
Other Asphalt	2,100.00

**FESOP QUARTERLY REPORT - FUEL & SLAG USAGE / SO2 & HCI EMISSIONS**

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Fuel Types / Slag (units)	Column 1	Column 2	Column 1 + Column 2	Equation Results	
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	Sulfur Dioxide (SO2) Emissions (tons per 12 months)	Hydrogen Chloride (HCI) Emissions (tons per 12 months)
Month 1	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Waste Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag Usage (tons)					
Month 2	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Waste Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag Usage (tons)					
Month 3	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Waste Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag Usage (tons)					
	Diesel Fuel Usage (gallons)					

- No deviation occurred in this reporting period. Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_
- Deviation/s occurred in this reporting period. Title / Position: \_\_\_\_\_ Phone: \_\_\_\_\_
- Deviation has been reported on: \_\_\_\_\_ Signature: \_\_\_\_\_

**FESOP QUARTERLY REPORT - LIQUID BINDER USAGE / VOC EMISSIONS**

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Liquid Binder Types (tons)	Column 1	Column 2	Column 1 + Column 2	Equation Results
		Solvent Usage This Month	Solvent Usage Previous 11 Months	Solvent Usage 12 Month Total	VOC Emissions (tons per 12 months)
Month 1	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 2	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 3	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				

- No deviation occurred in this reporting period.
- Deviation/s occurred in this reporting period.  
 Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title / Position: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Signature: \_\_\_\_\_

$$\text{VOC Emitted (tons/yr)} = \frac{\text{VOC solvent used for each liquid binder (tons/yr)}}{\text{Adjustment factor}}$$

Type of Liquid Binder	Adjustment Factor
Cutback Asphalt Rapid Cure	1.053
Cutback Asphalt Medium Cure	1.429
Cutback Asphalt Slow Cure	4.0
Emulsified Asphalt	2.155
Other Asphalt	40.0

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

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Babcock Paving, Inc.  
Source Address: 6049 Work Street, DeMotte, Indiana 46310  
FESOP Permit No.: F073-32549-00041

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

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C- General Reporting. Any deviation from the requirements of this permit, 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: \_\_\_\_\_

**Attachment D**  
**Federally Enforceable State Operating Permit**  
**(FESOP) No. F073-32549-00041**

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**Electronic Code of Federal Regulations**

**Title 40: Protection of Environment**

**PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES**

**Subpart 000—Standards of Performance for Nonmetallic Mineral Processing Plants**

Source: 74 FR 19309, Apr. 28, 2009, unless otherwise noted.

**§ 60.670 Applicability and designation of affected facility.**

(a)(1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.

(2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; plants without crushers or grinding mills above ground; and wet material processing operations (as defined in § 60.671).

(b) An affected facility that is subject to the provisions of subparts F or I of this part or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.

(c) Facilities at the following plants are not subject to the provisions of this subpart:

(1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 23 megagrams per hour (25 tons per hour) or less;

(2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 136 megagrams per hour (150 tons per hour) or less; and

(3) Common clay plants and pumice plants with capacities, as defined in § 60.671, of 9 megagrams per hour (10 tons per hour) or less.

(d)(1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in § 60.671, having the same function as the existing facility, and there is no increase in the amount of emissions, the new facility is exempt from the provisions of §§ 60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.

(2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in § 60.676(a).

(3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§ 60.672, 60.674 and 60.675.

(e) An affected facility under paragraph (a) of this section that commences construction, modification, or reconstruction after August 31, 1983, is subject to the requirements of this part.

(f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that do not apply to owners and operators of affected facilities subject to this subpart or that apply with certain exceptions.

**§ 60.671 Definitions.**

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

*Bagging operation* means the mechanical process by which bags are filled with nonmetallic minerals.

*Belt conveyor* means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

*Bucket elevator* means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

*Building* means any frame structure with a roof.

*Capacity* means the cumulative rated capacity of all initial crushers that are part of the plant.

*Capture system* means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more affected facilities to a control device.

*Control device* means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities at a nonmetallic mineral processing plant.

*Conveying system* means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

*Crush* or *Crushing* means to reduce the size of nonmetallic mineral material by means of physical impaction of the crusher or grinding mill upon the material.

*Crusher* means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: Jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

*Enclosed truck or railcar loading station* means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

*Fixed plant* means any nonmetallic mineral processing plant at which the processing equipment specified in § 60.670(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

*Fugitive emission* means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

*Grinding mill* means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: Hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

*Initial crusher* means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

*Nonmetallic mineral* means any of the following minerals or any mixture of which the majority is any of the following minerals:

(1) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.

(2) Sand and Gravel.

(3) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.

(4) Rock Salt.

(5) Gypsum (natural or synthetic).

(6) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.

(7) Pumice.

(8) Gilsonite.

(9) Talc and Pyrophyllite.

(10) Boron, including Borax, Kernite, and Colemanite.

(11) Barite.

(12) Fluorospar.

(13) Feldspar.

(14) Diatomite.

(15) Perlite.

(16) Vermiculite.

(17) Mica.

(18) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

*Nonmetallic mineral processing plant* means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in § 60.670 (b) and (c).

*Portable plant* means any nonmetallic mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

*Production line* means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

*Saturated material* means, for purposes of this subpart, mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket elevators and belt conveyors. Material that is wetted solely by wet suppression systems is not considered to be "saturated" for purposes of this definition.

*Screening operation* means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens). Grizzly feeders associated with truck dumping and static (non-moving) grizzlies used anywhere in the nonmetallic mineral processing plant are not considered to be screening operations.

*Seasonal shut down* means shut down of an affected facility for a period of at least 45 consecutive days due to weather or seasonal market conditions.

*Size* means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

*Stack emission* means the particulate matter that is released to the atmosphere from a capture system.

*Storage bin* means a facility for storage (including surge bins) of nonmetallic minerals prior to further processing or loading.

*Transfer point* means a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile.

*Truck dumping* means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: Trucks, front end loaders, skip hoists, and railcars.

*Vent* means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

*Wet material processing operation(s)* means any of the following:

- (1) Wet screening operations (as defined in this section) and subsequent screening operations, bucket elevators and belt conveyors in the production line that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line; or
- (2) Screening operations, bucket elevators and belt conveyors in the production line downstream of wet mining operations (as defined in this section) that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line.

*Wet mining operation* means a mining or dredging operation designed and operated to extract any nonmetallic mineral regulated under this subpart from deposits existing at or below the water table, where the nonmetallic mineral is saturated with water.

*Wet screening operation* means a screening operation at a nonmetallic mineral processing plant which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.

#### **§ 60.672 Standard for particulate matter (PM).**

- (a) Affected facilities must meet the stack emission limits and compliance requirements in Table 2 of this subpart within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.8. The requirements in Table 2 of this subpart apply for affected facilities with capture systems used to capture and transport particulate matter to a control device.

(b) Affected facilities must meet the fugitive emission limits and compliance requirements in Table 3 of this subpart within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.11. The requirements in Table 3 of this subpart apply for fugitive emissions from affected facilities without capture systems and for fugitive emissions escaping capture systems.

(c) [Reserved]

(d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

(e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a) and (b) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:

(1) Fugitive emissions from the building openings (except for vents as defined in § 60.671) must not exceed 7 percent opacity; and

(2) Vents (as defined in § 60.671) in the building must meet the applicable stack emission limits and compliance requirements in Table 2 of this subpart.

(f) Any baghouse that controls emissions from only an individual, enclosed storage bin is exempt from the applicable stack PM concentration limit (and associated performance testing) in Table 2 of this subpart but must meet the applicable stack opacity limit and compliance requirements in Table 2 of this subpart. This exemption from the stack PM concentration limit does not apply for multiple storage bins with combined stack emissions.

#### **§ 60.673 Reconstruction.**

(a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital cost that would be required to construct a comparable new facility" under § 60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.

(b) Under § 60.15, the "fixed capital cost of the new components" includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

#### **§ 60.674 Monitoring of operations.**

(a) The owner or operator of any affected facility subject to the provisions of this subpart which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

(1) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 250$  pascals  $\pm 1$  inch water gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(2) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 5$  percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(b) The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under § 60.676(b).

(1) If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility is exempt from the 5-year repeat testing requirement specified in Table 3 of this subpart provided that the affected facility meets the criteria in paragraphs (b)(1)(i) and (ii) of this section:

(i) The owner or operator of the affected facility conducts periodic inspections of the upstream water spray(s) that are responsible for controlling fugitive emissions from the affected facility. These inspections are conducted according to paragraph (b) of this section and § 60.676(b), and

(ii) The owner or operator of the affected facility designates which upstream water spray(s) will be periodically inspected at the time of the initial performance test required under § 60.11 of this part and § 60.675 of this subpart.

(2) If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than water sprays during the monthly inspection (for example, water from recent rainfall), the logbook entry required under § 60.676(b) must specify the control mechanism being used instead of the water sprays.

(c) Except as specified in paragraph (d) or (e) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions must conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, Appendix A-7). The Method 22 (40 CFR part 60, Appendix A-7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation. The owner or operator must record each Method 22 (40 CFR part 60, Appendix A-7) test, including the date and any corrective actions taken, in the logbook required under § 60.676(b). The owner or operator of the affected facility may establish a different baghouse-specific success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test according to § 60.675(b) simultaneously with a Method 22 (40 CFR part 60, Appendix A-7) to determine what constitutes normal visible emissions from that affected facility's baghouse when it is in compliance with the applicable PM concentration limit in Table 2 of this subpart. The revised visible emissions success level must be incorporated into the permit for the affected facility.

(d) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A-7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions may use a bag leak detection system. The owner or operator must install, operate, and maintain the bag leak detection system according to paragraphs (d)(1) through (3) of this section.

(1) Each bag leak detection system must meet the specifications and requirements in paragraphs (d)(1)(i) through (viii) of this section.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.

(ii) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means ( e.g. , using a strip chart recorder or a data logger).

(iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (d)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

(v) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (d)(1)(vi) of this section.

(vi) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (d)(2) of this section.

(vii) The owner or operator must install the bag leak detection sensor downstream of the fabric filter.

(viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(2) The owner or operator of the affected facility must develop and submit to the Administrator or delegated authority for approval of a site-specific monitoring plan for each bag leak detection system. The owner or operator must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (d)(2)(i) through (vi) of this section.

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system, including quality assurance procedures;

(iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(v) How the bag leak detection system output will be recorded and stored; and

(vi) Corrective action procedures as specified in paragraph (d)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(3) For each bag leak detection system, the owner or operator must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (d)(2)(vi) of this section, the owner or operator must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions;

(ii) Sealing off defective bags or filter media;

(iii) Replacing defective bags or filter media or otherwise repairing the control device;

(iv) Sealing off a defective fabric filter compartment;

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or

(vi) Shutting down the process producing the PM emissions.

(e) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A-7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility that is subject to the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) may follow the continuous compliance requirements in row 1 items (i) through (iii) of Table 6 to Subpart AAAAA of 40 CFR part 63.

**§ 60.675 Test methods and procedures.**

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendices A-1 through A-7 of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.

(b) The owner or operator shall determine compliance with the PM standards in § 60.672(a) as follows:

(1) Except as specified in paragraphs (e)(3) and (4) of this section, Method 5 of Appendix A-3 of this part or Method 17 of Appendix A-6 of this part shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, Appendix A-3), if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.

(2) Method 9 of Appendix A-4 of this part and the procedures in § 60.11 shall be used to determine opacity.

(c)(1) In determining compliance with the particulate matter standards in § 60.672(b) or § 60.672(e)(1), the owner or operator shall use Method 9 of Appendix A-4 of this part and the procedures in § 60.11, with the following additions:

(i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources ( e.g., road dust). The required observer position relative to the sun (Method 9 of Appendix A-4 of this part, Section 2.1) must be followed.

(iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

(2)(i) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under § 60.672(f) of this subpart, using Method 9 (40 CFR part 60, Appendix A-4), the duration of the Method 9 (40 CFR part 60, Appendix A-4) observations shall be 1 hour (ten 6-minute averages).

(ii) The duration of the Method 9 (40 CFR part 60, Appendix A-4) observations may be reduced to the duration the affected facility operates (but not less than 30 minutes) for baghouses that control storage bins or enclosed truck or railcar loading stations that operate for less than 1 hour at a time.

(3) When determining compliance with the fugitive emissions standard for any affected facility described under § 60.672(b) or § 60.672(e)(1) of this subpart, the duration of the Method 9 (40 CFR part 60, Appendix A-4) observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limits in Table 3 of this subpart must be based on the average of the five 6-minute averages.

(d) To demonstrate compliance with the fugitive emission limits for buildings specified in § 60.672(e)(1), the owner or operator must complete the testing specified in paragraph (d)(1) and (2) of this section. Performance tests must be conducted while all affected facilities inside the building are operating.

(1) If the building encloses any affected facility that commences construction, modification, or reconstruction on or after April 22, 2008, the owner or operator of the affected facility must conduct an initial Method 9 (40 CFR part 60, Appendix A-4) performance test according to this section and § 60.11.

(2) If the building encloses only affected facilities that commenced construction, modification, or reconstruction before April 22, 2008, and the owner or operator has previously conducted an initial Method 22 (40 CFR part 60, Appendix A-7) performance test showing zero visible emissions, then the owner or operator has demonstrated compliance with

the opacity limit in § 60.672(e)(1). If the owner or operator has not conducted an initial performance test for the building before April 22, 2008, then the owner or operator must conduct an initial Method 9 (40 CFR part 60, Appendix A-4) performance test according to this section and § 60.11 to show compliance with the opacity limit in § 60.672(e)(1).

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

(i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.

(2) A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met:

(i) No more than three emission points may be read concurrently.

(ii) All three emission points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.

(iii) If an opacity reading for any one of the three emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two points and continue reading just that single point.

(3) Method 5I of Appendix A-3 of this part may be used to determine the PM concentration as an alternative to the methods specified in paragraph (b)(1) of this section. Method 5I (40 CFR part 60, Appendix A-3) may be useful for affected facilities that operate for less than 1 hour at a time such as (but not limited to) storage bins or enclosed truck or railcar loading stations.

(4) In some cases, velocities of exhaust gases from building vents may be too low to measure accurately with the type S pitot tube specified in EPA Method 2 of Appendix A-1 of this part [ *i.e.*, velocity head <1.3 mm H<sub>2</sub>O (0.05 in. H<sub>2</sub>O)] and referred to in EPA Method 5 of Appendix A-3 of this part. For these conditions, the owner or operator may determine the average gas flow rate produced by the power fans ( *e.g.*, from vendor-supplied fan curves) to the building vent. The owner or operator may calculate the average gas velocity at the building vent measurement site using Equation 1 of this section and use this average velocity in determining and maintaining isokinetic sampling rates.

$$v_e = \frac{Q_f}{A_e} \quad (\text{Eq. 1})$$

Where:

$V_e$  = average building vent velocity (feet per minute);

$Q_f$  = average fan flow rate (cubic feet per minute); and

$A_e$  = area of building vent and measurement location (square feet).

(f) To comply with § 60.676(d), the owner or operator shall record the measurements as required in § 60.676(c) using the monitoring devices in § 60.674 (a)(1) and (2) during each particulate matter run and shall determine the averages.

(g) For performance tests involving only Method 9 (40 CFR part 60 Appendix A-4) testing, the owner or operator may reduce the 30-day advance notification of performance test in § 60.7(a)(6) and 60.8(d) to a 7-day advance notification.

(h) [Reserved]

(i) If the initial performance test date for an affected facility falls during a seasonal shut down (as defined in § 60.671 of this subpart) of the affected facility, then with approval from the permitting authority, the owner or operator may postpone the initial performance test until no later than 60 calendar days after resuming operation of the affected facility.

**§ 60.676 Reporting and recordkeeping.**

(a) Each owner or operator seeking to comply with § 60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.

(1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

(i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and

(ii) The rated capacity in tons per hour of the replacement equipment.

(2) For a screening operation:

(i) The total surface area of the top screen of the existing screening operation being replaced and

(ii) The total surface area of the top screen of the replacement screening operation.

(3) For a conveyor belt:

(i) The width of the existing belt being replaced and

(ii) The width of the replacement conveyor belt.

(4) For a storage bin:

(i) The rated capacity in megagrams or tons of the existing storage bin being replaced and

(ii) The rated capacity in megagrams or tons of replacement storage bins.

(b)(1) Owners or operators of affected facilities (as defined in §§ 60.670 and 60.671) for which construction, modification, or reconstruction commenced on or after April 22, 2008, must record each periodic inspection required under § 60.674(b) or (c), including dates and any corrective actions taken, in a logbook (in written or electronic format). The owner or operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Administrator upon request.

(2) For each bag leak detection system installed and operated according to § 60.674(d), the owner or operator must keep the records specified in paragraphs (b)(2)(i) through (iii) of this section.

(i) Records of the bag leak detection system output;

(ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

(iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.

(3) The owner or operator of each affected facility demonstrating compliance according to § 60.674(e) by following the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) must maintain records of visible emissions observations required by § 63.7132(a)(3) and (b) of 40 CFR part 63, subpart AAAAA.

(c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss and liquid flow rate decrease by more than 30 percent from the average determined during the most recent performance test.

(e) The reports required under paragraph (d) of this section shall be postmarked within 30 days following end of the second and fourth calendar quarters.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in § 60.672 of this subpart, including reports of opacity observations made using Method 9 (40 CFR part 60, Appendix A-4) to demonstrate compliance with § 60.672(b), (e) and (f).

(g) The owner or operator of any wet material processing operation that processes saturated and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. At the time of such change, this screening operation, bucket elevator, or belt conveyor becomes subject to the applicable opacity limit in § 60.672(b) and the emission test requirements of § 60.11.

(h) The subpart A requirement under § 60.7(a)(1) for notification of the date construction or reconstruction commenced is waived for affected facilities under this subpart.

(i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.

(1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

(2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.

(j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

(k) Notifications and reports required under this subpart and under subpart A of this part to demonstrate compliance with this subpart need only to be sent to the EPA Region or the State which has been delegated authority according to § 60.4(b).

**Table 1 to Subpart OOO of Part 60—Exceptions to Applicability of Subpart A to Subpart OOO**

Subpart A reference	Applies to subpart OOO	Explanation
60.4, Address	Yes	Except in § 60.4(a) and (b) submittals need not be submitted to both the EPA Region and delegated State authority (§ 60.676(k)).
60.7, Notification and recordkeeping	Yes	Except in (a)(1) notification of the date construction or reconstruction commenced (§ 60.676(h)).
		Also, except in (a)(6) performance tests involving only Method 9 (40 CFR part 60, Appendix A-4) require a 7-day advance notification instead of 30 days (§ 60.675(g)).
60.8, Performance tests	Yes	Except in (d) performance tests involving only Method 9 (40 CFR part 60, Appendix A-4) require a 7-day advance notification instead of 30 days (§ 60.675(g)).
60.11, Compliance with standards and maintenance requirements	Yes	Except in (b) under certain conditions (§§ 60.675(c)), Method 9 (40 CFR part 60, Appendix A-4) observation is reduced from 3 hours to 30 minutes for fugitive emissions.
60.18, General control device	No	Flares will not be used to comply with the emission limits.

**Table 2 to Subpart OOO of Part 60—Stack Emission Limits for Affected Facilities With Capture Systems**

For * * *	The owner or operator must meet a PM limit of * * *	And the owner or operator must meet an opacity limit of * * *	The owner or operator must demonstrate compliance with these limits by conducting * * *
Affected facilities (as defined in §§ 60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008	0.05 g/dscm (0.022 gr/dscf) <sup>a</sup>	7 percent for dry control devices <sup>b</sup>	An initial performance test according to § 60.8 of this part and § 60.675 of this subpart; and Monitoring of wet scrubber parameters according to § 60.674(a) and § 60.676(c), (d), and (e).
Affected facilities (as defined in §§ 60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008	0.032 g/dscm (0.014 gr/dscf) <sup>a</sup>	Not applicable (except for individual enclosed storage bins) 7 percent for dry control devices on individual enclosed storage bins	An initial performance test according to § 60.8 of this part and § 60.675 of this subpart; and Monitoring of wet scrubber parameters according to § 60.674(a) and § 60.676(c), (d), and (e); and
			Monitoring of baghouses according to § 60.674(c), (d), or (e) and § 60.676(b).

<sup>a</sup> Exceptions to the PM limit apply for individual enclosed storage bins and other equipment. See § 60.672(d) through (f).

<sup>b</sup> The stack opacity limit and associated opacity testing requirements do not apply for affected facilities using wet scrubbers.

**Table 3 to Subpart OOO of Part 60—Fugitive Emission Limits**

For * * *	The owner or operator must meet the following fugitive emissions limit for grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility (as defined in §§ 60.670 and 60.671) * * *	The owner or operator must meet the following fugitive emissions limit for crushers at which a capture system is not used * * *	The owner or operator must demonstrate compliance with these limits by conducting * * *
Affected facilities (as defined in §§ 60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008	10 percent opacity	15 percent opacity	An initial performance test according to § 60.11 of this part and § 60.675 of this subpart.
Affected facilities (as defined in §§ 60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008	7 percent opacity	12 percent opacity	An initial performance test according to § 60.11 of this part and § 60.675 of this subpart; and Periodic inspections of water sprays according to § 60.674(b) and § 60.676(b); and
			A repeat performance test according to § 60.11 of this part and § 60.675 of this subpart within 5 years from the previous performance test for fugitive emissions from affected facilities without water sprays. Affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in § 60.674(b) and § 60.676(b) are exempt from this 5-year repeat testing requirement.

**Attachment E**  
**Federally Enforceable State Operating Permit**  
**(FESOP) No. F073-32549-00041**

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**Electronic Code of Federal Regulations**

**Title 40: Protection of Environment**

**PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES**

**Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

SOURCE: 71 FR 39172, July 11, 2006, unless otherwise noted.

**What This Subpart Covers**

**§60.4200 Am I subject to this subpart?**

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

(ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of §60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

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

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(e) Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

### **Emission Standards for Manufacturers**

#### **§60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?**

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 89.112, 40 CFR 89.113, 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same model year and maximum engine power.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 through 2010 model year non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(c) Stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power.

(d) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(3) Their 2013 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(e) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards and other requirements for new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.110, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(f) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary non-emergency CI ICE identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 1 to 40 CFR 1042.1 identifies 40 CFR part 1042 as being applicable, 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the Federal Aid Highway System (FAHS); and

(2) Marine offshore installations.

(g) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power, and displacement of the reconstructed stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

**§60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?**

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(i) The certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants for model year 2007 engines, and

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(2) For 2011 model year and later, the certification emission standards for new nonroad CI engines for engines of the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants.

(c) [Reserved]

(d) Beginning with the model years in table 3 to this subpart, stationary CI internal combustion engine manufacturers must certify their fire pump stationary CI ICE to the emission standards in table 4 to this subpart, for all pollutants, for the same model year and NFPA nameplate power.

(e) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE that are not fire pump engines to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder;

(3) Their 2013 model year emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder; and

(4) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(f) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE to the certification emission standards and other requirements applicable to Tier 3 new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power less than 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(g) Notwithstanding the requirements in paragraphs (a) through (d) of this section, stationary emergency CI internal combustion engines identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 2 to 40 CFR 1042.101 identifies Tier 3 standards as being applicable, the requirements applicable to Tier 3 engines in 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the FAHS; and

(2) Marine offshore installations.

(h) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (f) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed emergency stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011]

**§60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?**

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§60.4201 and 60.4202 during the certified emissions life of the engines.

[76 FR 37968, June 28, 2011]

## Emission Standards for Owners and Operators

### §60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in §60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

(c) Owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the following requirements:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO<sub>x</sub> in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 grams per kilowatt-hour (g/KW-hr) (12.7 grams per horsepower-hr (g/HP-hr)) when maximum engine speed is less than 130 revolutions per minute (rpm);

(ii)  $45 \cdot n^{-0.2}$  g/KW-hr ( $34 \cdot n^{-0.2}$  g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012 and before January 1, 2016, limit the emissions of NO<sub>x</sub> in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii)  $44 \cdot n^{-0.23}$  g/KW-hr ( $33 \cdot n^{-0.23}$  g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) For engines installed on or after January 1, 2016, limit the emissions of NO<sub>x</sub> in the stationary CI internal combustion engine exhaust to the following:

(i) 3.4 g/KW-hr (2.5 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii)  $9.0 \cdot n^{-0.20}$  g/KW-hr ( $6.7 \cdot n^{-0.20}$  g/HP-hr) where n (maximum engine speed) is 130 or more but less than 2,000 rpm; and

(iii) 2.0 g/KW-hr (1.5 g/HP-hr) where maximum engine speed is greater than or equal to 2,000 rpm.

(4) Reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

(d) Owners and operators of non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the not-to-exceed (NTE) standards as indicated in §60.4212.

(e) Owners and operators of any modified or reconstructed non-emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed non-emergency stationary CI ICE that are specified in paragraphs (a) through (d) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011]

**§60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?**

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

(d) Owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in this section.

(1) For engines installed prior to January 1, 2012, limit the emissions of NO<sub>x</sub> in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii)  $45 \cdot n^{-0.2}$  g/KW-hr ( $34 \cdot n^{-0.2}$  g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/kW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO<sub>x</sub> in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii)  $44 \cdot n^{-0.23}$  g/KW-hr ( $33 \cdot n^{-0.23}$  g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

(e) Owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in §60.4212.

(f) Owners and operators of any modified or reconstructed emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in paragraphs (a) through (e) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

**§60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?**

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 over the entire life of the engine.

[76 FR 37969, June 28, 2011]

**Fuel Requirements for Owners and Operators**

**§60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?**

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

(c) [Reserved]

(d) Beginning June 1, 2012, owners and operators of stationary CI ICE subject to this subpart with a displacement of greater than or equal to 30 liters per cylinder are no longer subject to the requirements of paragraph (a) of this section, and must use fuel that meets a maximum per-gallon sulfur content of 1,000 parts per million (ppm).

(e) Stationary CI ICE that have a national security exemption under §60.4200(d) are also exempt from the fuel requirements in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

**Other Requirements for Owners and Operators**

**§60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?**

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) After December 31, 2018, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.

(h) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (g) of this section after the dates specified in paragraphs (a) through (g) of this section.

(i) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

**§60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?**

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

**Compliance Requirements**

**§60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?**

(a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in §60.4201(a) through (c) and §60.4202(a), (b) and (d) using the certification procedures required in 40 CFR part 89, subpart B, or 40 CFR part 1039, subpart C, as applicable, and must test their engines as specified in those parts. For the purposes of this subpart, engines certified to the standards in table 1 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89. For the purposes of this subpart, engines certified to the standards in table 4 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

(b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in §60.4201(d) and (e) and §60.4202(e) and (f) using the certification procedures required in 40 CFR part 94, subpart C, or 40 CFR part 1042, subpart C, as applicable, and must test their engines as specified in 40 CFR part 94 or 1042, as applicable.

(c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 1039.125, 1039.130, and 1039.135, and 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 89, 40 CFR part 94 or 40 CFR part 1042 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.

(1) Stationary CI internal combustion engines manufactured from January 1, 2006 to March 31, 2006 (January 1, 2006 to June 30, 2006 for fire pump engines), other than those that are part of certified engine families under the nonroad CI engine regulations, must be labeled according to 40 CFR 1039.20.

(2) Stationary CI internal combustion engines manufactured from April 1, 2006 to December 31, 2006 (or, for fire pump engines, July 1, 2006 to December 31 of the year preceding the year listed in table 3 to this subpart) must be labeled according to paragraphs (c)(2)(i) through (iii) of this section:

(i) Stationary CI internal combustion engines that are part of certified engine families under the nonroad regulations must meet the labeling requirements for nonroad CI engines, but do not have to meet the labeling requirements in 40 CFR 1039.20.

(ii) Stationary CI internal combustion engines that meet Tier 1 requirements (or requirements for fire pumps) under this subpart, but do not meet the requirements applicable to nonroad CI engines must be labeled according to 40 CFR 1039.20. The engine manufacturer may add language to the label clarifying that the engine meets Tier 1 requirements (or requirements for fire pumps) of this subpart.

(iii) Stationary CI internal combustion engines manufactured after April 1, 2006 that do not meet Tier 1 requirements of this subpart, or fire pumps engines manufactured after July 1, 2006 that do not meet the requirements for fire pumps under this subpart, may not be used in the U.S. If any such engines are manufactured in the U.S. after April 1, 2006 (July 1, 2006 for fire pump engines), they must be exported or must be brought into compliance with the appropriate standards prior to initial operation. The export provisions of 40 CFR 1068.230 would apply to engines for export and the manufacturers must label such engines according to 40 CFR 1068.230.

(3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.

(i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate.

(ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate, but the words "stationary" must be included instead of "nonroad" or "marine" on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.

(iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.

(d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR parts 89, 94, 1039 or 1042 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include any

such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts.

(e) Manufacturers of engine families discussed in paragraph (d) of this section may meet the labeling requirements referred to in paragraph (c) of this section for stationary CI ICE by either adding a separate label containing the information required in paragraph (c) of this section or by adding the words "and stationary" after the word "nonroad" or "marine," as appropriate, to the label.

(f) Starting with the model years shown in table 5 to this subpart, stationary CI internal combustion engine manufacturers must add a permanent label stating that the engine is for stationary emergency use only to each new emergency stationary CI internal combustion engine greater than or equal to 19 KW (25 HP) that meets all the emission standards for emergency engines in §60.4202 but does not meet all the emission standards for non-emergency engines in §60.4201. The label must be added according to the labeling requirements specified in 40 CFR 1039.135(b). Engine manufacturers must specify in the owner's manual that operation of emergency engines is limited to emergency operations and required maintenance and testing.

(g) Manufacturers of fire pump engines may use the test cycle in table 6 to this subpart for testing fire pump engines and may test at the NFPA certified nameplate HP, provided that the engine is labeled as "Fire Pump Applications Only".

(h) Engine manufacturers, including importers, may introduce into commerce uncertified engines or engines certified to earlier standards that were manufactured before the new or changed standards took effect until inventories are depleted, as long as such engines are part of normal inventory. For example, if the engine manufacturers' normal industry practice is to keep on hand a one-month supply of engines based on its projected sales, and a new tier of standards starts to apply for the 2009 model year, the engine manufacturer may manufacture engines based on the normal inventory requirements late in the 2008 model year, and sell those engines for installation. The engine manufacturer may not circumvent the provisions of §§60.4201 or 60.4202 by stockpiling engines that are built before new or changed standards take effect. Stockpiling of such engines beyond normal industry practice is a violation of this subpart.

(i) The replacement engine provisions of 40 CFR 89.1003(b)(7), 40 CFR 94.1103(b)(3), 40 CFR 94.1103(b)(4) and 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

**§60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?**

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

(d) If you are an owner or operator and must comply with the emission standards specified in §60.4204(c) or §60.4205(d), you must demonstrate compliance according to the requirements specified in paragraphs (d)(1) through (3) of this section.

(1) Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in §60.4213.

(2) Establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.

(i) Identification of the specific parameters you propose to monitor continuously;

(ii) A discussion of the relationship between these parameters and NO<sub>x</sub> and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NO<sub>x</sub> and PM emissions;

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

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

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

(3) For non-emergency engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in §60.4213.

(e) If you are an owner or operator of a modified or reconstructed stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(e) or §60.4205(f), you must demonstrate compliance according to one of the methods specified in paragraphs (e)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in §60.4204(e) or §60.4205(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in §60.4212 or §60.4213, as appropriate. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the

engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

(g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

(1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

(3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37970, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

### **Testing Requirements for Owners and Operators**

#### **§60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?**

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \quad (\text{Eq. 1})$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

(e) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1042 must not exceed the NTE standards for the same model year and maximum engine power as required in 40 CFR 1042.101(c).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

**§60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?**

Owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests according to paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted according to the requirements in §60.8 and under the specific conditions that this subpart specifies in table 7. The test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c).

(c) You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must last at least 1 hour.

(d) To determine compliance with the percent reduction requirement, you must follow the requirements as specified in paragraphs (d)(1) through (3) of this section.

(1) You must use Equation 2 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 2})$$

Where:

$C_i$  = concentration of  $\text{NO}_x$  or PM at the control device inlet,

$C_o$  = concentration of  $\text{NO}_x$  or PM at the control device outlet, and

R = percent reduction of  $\text{NO}_x$  or PM emissions.

(2) You must normalize the  $\text{NO}_x$  or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen ( $\text{O}_2$ ) using Equation 3 of this section, or an equivalent percent carbon dioxide ( $\text{CO}_2$ ) using the procedures described in paragraph (d)(3) of this section.

$$C_{\text{adj}} = C_d \frac{5.9}{20.9 - \% \text{O}_2} \quad (\text{Eq. 3})$$

Where:

$C_{\text{adj}}$  = Calculated  $\text{NO}_x$  or PM concentration adjusted to 15 percent  $\text{O}_2$ .

$C_d$  = Measured concentration of  $\text{NO}_x$  or PM, uncorrected.

5.9 = 20.9 percent  $\text{O}_2$  - 15 percent  $\text{O}_2$ , the defined  $\text{O}_2$  correction value, percent.

$\% \text{O}_2$  = Measured  $\text{O}_2$  concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent  $\text{O}_2$  and  $\text{CO}_2$  concentration is measured in lieu of  $\text{O}_2$  concentration measurement, a  $\text{CO}_2$  correction factor is needed. Calculate the  $\text{CO}_2$  correction factor as described in paragraphs (d)(3)(i) through (iii) of this section.

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

$$F_o = \frac{0.209 F_d}{F_c} \quad (\text{Eq. 4})$$

Where:

$F_o$  = Fuel factor based on the ratio of  $\text{O}_2$  volume to the ultimate  $\text{CO}_2$  volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is  $\text{O}_2$ , percent/100.

$F_d$  = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19,  $\text{dsm}^3/\text{J}$  ( $\text{dscf}/106$  Btu).

$F_c$  = Ratio of the volume of  $\text{CO}_2$  produced to the gross calorific value of the fuel from Method 19,  $\text{dsm}^3/\text{J}$  ( $\text{dscf}/106$  Btu).

(ii) Calculate the CO<sub>2</sub> correction factor for correcting measurement data to 15 percent O<sub>2</sub>, as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \quad (\text{Eq. 5})$$

Where:

X<sub>CO2</sub> = CO<sub>2</sub> correction factor, percent.

5.9 = 20.9 percent O<sub>2</sub>-15 percent O<sub>2</sub>, the defined O<sub>2</sub> correction value, percent.

(iii) Calculate the NO<sub>x</sub> and PM gas concentrations adjusted to 15 percent O<sub>2</sub> using CO<sub>2</sub> as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \quad (\text{Eq. 6})$$

Where:

C<sub>adj</sub> = Calculated NO<sub>x</sub> or PM concentration adjusted to 15 percent O<sub>2</sub>.

C<sub>d</sub> = Measured concentration of NO<sub>x</sub> or PM, uncorrected.

%CO<sub>2</sub> = Measured CO<sub>2</sub> concentration, dry basis, percent.

(e) To determine compliance with the NO<sub>x</sub> mass per unit output emission limitation, convert the concentration of NO<sub>x</sub> in the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{KW\text{-hour}} \quad (\text{Eq. 7})$$

Where:

ER = Emission rate in grams per KW-hour.

C<sub>d</sub> = Measured NO<sub>x</sub> concentration in ppm.

1.912x10<sup>-3</sup> = Conversion constant for ppm NO<sub>x</sub> to grams per standard cubic meter at 25 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Brake work of the engine, in KW-hour.

(f) To determine compliance with the PM mass per unit output emission limitation, convert the concentration of PM in the engine exhaust using Equation 8 of this section:

$$ER = \frac{C_{adj} \times Q \times T}{KW\text{-hour}} \quad (\text{Eq. 8})$$

Where:

ER = Emission rate in grams per KW-hour.

$C_{adj}$  = Calculated PM concentration in grams per standard cubic meter.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Energy output of the engine, in KW.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

### **Notification, Reports, and Records for Owners and Operators**

#### **§60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?**

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(1) Submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.

(i) Name and address of the owner or operator;

(ii) The address of the affected source;

(iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(iv) Emission control equipment; and

(v) Fuel used.

(2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.

(i) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(ii) Maintenance conducted on the engine.

(iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.

(iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

(d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in §60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

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

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in §60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §60.4211(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purposes specified in §60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §60.4.

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013]

### **Special Requirements**

#### **§60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?**

(a) Stationary CI ICE with a displacement of less than 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the applicable emission standards in §§60.4202 and 60.4205.

(b) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in §60.4207.

(c) Stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the following emission standards:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO<sub>x</sub> in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii)  $45 \cdot n^{-0.2}$  g/KW-hr ( $34 \cdot n^{-0.2}$  g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO<sub>x</sub> in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii)  $44 \cdot n^{-0.23}$  g/KW-hr ( $33 \cdot n^{-0.23}$  g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

**§60.4216 What requirements must I meet for engines used in Alaska?**

(a) Prior to December 1, 2010, owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder located in areas of Alaska not accessible by the FAHS should refer to 40 CFR part 69 to determine the diesel fuel requirements applicable to such engines.

(b) Except as indicated in paragraph (c) of this section, manufacturers, owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in areas of Alaska not accessible by the FAHS may meet the requirements of this subpart by manufacturing and installing engines meeting the requirements of 40 CFR parts 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR parts 89 and 1039, as indicated in sections §§60.4201(f) and 60.4202(g) of this subpart.

(c) Manufacturers, owners and operators of stationary CI ICE that are located in areas of Alaska not accessible by the FAHS may choose to meet the applicable emission standards for emergency engines in §60.4202 and §60.4205, and not those for non-emergency engines in §60.4201 and §60.4204, except that for 2014 model year and later non-emergency CI ICE, the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in §60.4201 and §60.4204 or install a PM emission control device that achieves PM emission reductions of 85 percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions.

(d) The provisions of §60.4207 do not apply to owners and operators of pre-2014 model year stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS.

(e) The provisions of §60.4208(a) do not apply to owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS until after December 31, 2009.

(f) The provisions of this section and §60.4207 do not prevent owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS from using fuels mixed with used lubricating oil, in volumes of up to 1.75 percent of the total fuel. The sulfur content of the used lubricating oil must be less than 200 parts per million. The used lubricating oil must meet the on-specification levels and properties for used oil in 40 CFR 279.11.

[76 FR 37971, June 28, 2011]

**§60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?**

Owners and operators of stationary CI ICE that do not use diesel fuel may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in §60.4204 or §60.4205 using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.

[76 FR 37972, June 28, 2011]

**General Provisions**

**§60.4218 What parts of the General Provisions apply to me?**

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.

**Definitions**

**§60.4219 What definitions apply to this subpart?**

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

*Certified emissions life* means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

*Combustion turbine* means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

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

*Date of manufacture* means one of the following things:

- (1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.
- (2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.
- (3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

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

*Diesel particulate filter* means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

*Emergency stationary internal combustion engine* means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in §60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in §60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in §60.4211(f).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in §60.4211(f)(2)(ii) or (iii) and §60.4211(f)(3)(i).

*Engine manufacturer* means the manufacturer of the engine. See the definition of “manufacturer” in this section.

*Fire pump engine* means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

*Freshly manufactured engine* means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

*Installed* means the engine is placed and secured at the location where it is intended to be operated.

*Manufacturer* has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

*Maximum engine power* means maximum engine power as defined in 40 CFR 1039.801.

*Model year* means the calendar year in which an engine is manufactured (see “date of manufacture”), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see “date of manufacture”), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see “date of manufacture”).

*Other internal combustion engine* means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

*Reciprocating internal combustion engine* means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

*Rotary internal combustion engine* means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

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

*Stationary internal combustion engine* means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

*Subpart* means 40 CFR part 60, subpart III.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011; 78 FR 6696, Jan. 30, 2013]

**Table 1 to Subpart III of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder**

[As stated in §§60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO <sub>x</sub>	HC	NO <sub>x</sub>	CO	PM
KW<8 (HP<11)	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

**Table 2 to Subpart IIII of Part 60—Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder**

[As stated in §60.4202(a)(1), you must comply with the following emission standards]

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
	Model year(s)	NO <sub>x</sub> + NMHC	CO	PM
KW<8 (HP<11)	2008+	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008+	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008+	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

**Table 3 to Subpart IIII of Part 60—Certification Requirements for Stationary Fire Pump Engines**

As stated in §60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to §60.4202(d) <sup>1</sup>
KW<75 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (HP>750)	2008

<sup>1</sup>Manufacturers of fire pump stationary CI ICE with a maximum engine power greater than or equal to 37 kW (50 HP) and less than 450 KW (600 HP) and a rated speed of greater than 2,650 revolutions per minute (rpm) are not required to certify such engines until three model years following the model year indicated in this Table 3 for engines in the applicable engine power category.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011]

**Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines**

[As stated in §§60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]

Maximum engine power	Model year(s)	NMHC + NO <sub>x</sub>	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+	7.5 (5.6)		0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)

Maximum engine power	Model year(s)	NMHC + NO <sub>x</sub>	CO	PM
	2011+	7.5 (5.6)		0.30 (0.22)
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ <sup>1</sup>	4.7 (3.5)		0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ <sup>1</sup>	4.7 (3.5)		0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010+ <sup>2</sup>	4.0 (3.0)		0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ <sup>3</sup>	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ <sup>3</sup>	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+	6.4 (4.8)		0.20 (0.15)

<sup>1</sup>For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

<sup>2</sup>For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

<sup>3</sup>In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

**Table 5 to Subpart IIII of Part 60—Labeling and Recordkeeping Requirements for New Stationary Emergency Engines**

[You must comply with the labeling requirements in §60.4210(f) and the recordkeeping requirements in §60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
19≤KW<56 (25≤HP<75)	2013
56≤KW<130 (75≤HP<175)	2012
KW≥130 (HP≥175)	2011

**Table 6 to Subpart IIII of Part 60—Optional 3-Mode Test Cycle for Stationary Fire Pump Engines**

[As stated in §60.4210(g), manufacturers of fire pump engines may use the following test cycle for testing fire pump engines:]

Mode No.	Engine speed <sup>1</sup>	Torque (percent) <sup>2</sup>	Weighting factors
1	Rated	100	0.30
2	Rated	75	0.50
3	Rated	50	0.20

<sup>1</sup>Engine speed:  $\pm 2$  percent of point.

<sup>2</sup>Torque: NFPA certified nameplate HP for 100 percent point. All points should be  $\pm 2$  percent of engine percent load value.

**Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of  $\geq 30$  Liters per Cylinder**

As stated in §60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of  $\geq 30$  liters per cylinder:

Each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of $\geq 30$ liters per cylinder	a. Reduce NO <sub>x</sub> emissions by 90 percent or more;	i. Select the sampling port location and number/location of traverse points at the inlet and outlet of the control device;		(a) For NO <sub>x</sub> , O <sub>2</sub> , and moisture measurement, ducts $\leq 6$ inches in diameter may be sampled at a single point located at the duct centroid and ducts $>6$ and $\leq 12$ inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is $>12$ inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Measure O <sub>2</sub> at the inlet and outlet of the control device;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for NO <sub>x</sub> concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO <sub>x</sub> concentration.

Each	Complying with the requirement to	You must	Using	According to the following requirements
		iv. Measure NO <sub>x</sub> at the inlet and outlet of the control device.	(3) Method 7E of 40 CFR part 60, appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(d) NO <sub>x</sub> concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	b. Limit the concentration of NO <sub>x</sub> in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and number/location of traverse points at the exhaust of the stationary internal combustion engine;		(a) For NO <sub>x</sub> , O <sub>2</sub> , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Determine the O <sub>2</sub> concentration of the stationary internal combustion engine exhaust at the sampling port location;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurement for NO <sub>x</sub> concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO <sub>x</sub> concentration.
		iv. Measure NO <sub>x</sub> at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(3) Method 7E of 40 CFR part 60, Appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(d) NO <sub>x</sub> concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

Each	Complying with the requirement to	You must	Using	According to the following requirements
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O <sub>2</sub> at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the inlet and outlet of the control device.	(4) Method 5 of 40 CFR part 60, appendix A-3	(d) PM concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O <sub>2</sub> concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine.	(4) Method 5 of 40 CFR part 60, appendix A-3.	(d) PM concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

**Table 8 to Subpart IIII of Part 60—Applicability of General Provisions to Subpart IIII**

[As stated in §60.4218, you must comply with the following applicable General Provisions:]

<b>General Provisions citation</b>	<b>Subject of citation</b>	<b>Applies to subpart</b>	<b>Explanation</b>
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4219.
§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4214(a).
§60.8	Performance tests	Yes	Except that §60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in subpart IIII.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	Yes	Except that §60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

## Indiana Department of Environmental Management Office of Air Quality

### Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP) Renewal

#### Source Description and Location

**Source Name:** Babcock Paving, Inc.  
**Source Location:** 6049 Work Street, Demotte, Indiana 46310  
**County:** Jasper  
**SIC Code:** 2951 (Asphalt Paving Mixtures and Blocks)  
**Operation Permit No.:** F073-32549-00041  
**Operation Permit Issuance Date:** April 8, 2013  
**Significant Permit Revision No.:** 073-35486-00041  
**Permit Reviewer:** Hannah L. Desrosiers

On February 20, 2015, the Office of Air Quality (OAQ) received an application from Babcock Paving, Inc. related to a modification to an existing drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation.

#### Existing Approvals

The source was issued FESOP Renewal No. F073-32549-00041 on April 8, 2013. The source has since received Administrative Amendment No. 073-34238-00041, issued on May 5, 2014.

#### County Attainment Status

The source is located in Jasper County. The following attainment status designations are applicable to Jasper County:

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. <sup>1</sup>
PM <sub>2.5</sub>	Unclassifiable or attainment effective April 5, 2005, for the annual PM <sub>2.5</sub> standard.
PM <sub>2.5</sub>	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM <sub>2.5</sub> standard.
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
<sup>1</sup> Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.	

(Air Pollution Control Division; 326 IAC 1-4-38; filed Dec 26, 2007, 1:43 p.m.: 20080123-IR-326070308FRA; filed Jan 30, 2013, 12:34 p.m.: 20130227-IR-326110774FRA; filed Oct 25, 2013, 2:41 p.m.: 20131120-IR-326130164FRA)

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NO<sub>x</sub>) 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 NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to ozone. Jasper County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) PM<sub>2.5</sub>  
Jasper County has been classified as attainment for PM<sub>2.5</sub>. Therefore, direct PM<sub>2.5</sub>, SO<sub>2</sub>, and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
  
- (e) Other Criteria Pollutants  
Jasper County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

<b>Fugitive Emissions</b>
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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; however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980 (NSPS Subpart I for Hot Mix Asphalt Facilities). Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

<b>Status of the Existing Source</b>
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The table below summarizes the potential to emit of the entire source, prior to the proposed revision, after consideration of all enforceable limits established in the effective permits:

This PTE table is taken from the TSD of FESOP Renewal No F073-32549-00041, issued on April 8, 2013.

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Revision (tons/year)								
	PM	PM <sub>10</sub> *	PM <sub>2.5</sub> **	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Worst Single HAP
<b>Ducted/Ductable Emissions</b>									
Dryer Fuel Combustion (worst case) <sup>(1)</sup>	40.50	32.27	32.27	73.67	32.85	1.81	27.59	10.08	8.82 (HCl)
Dryer/Mixer <sup>(2)</sup> (Process)	185.25	78.00	87.26	28.28	26.81	15.60	63.38	5.20	1.51 (formaldehyde)
Dryer/Mixer Slag Processing <sup>(2)</sup>	0	0	0	18.50	0	0	0	0	N/A
Hot Oil Heater - Fuel Combustion / Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	0.013	0.010 (hexane)
Generator (< 250 hp) Fuel Combustion (welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	2.43E <sup>-03</sup>	7.42E <sup>-04</sup> (formaldehyde)
Generator (< 250 hp) Fuel Combustion (emergency)	1.44E <sup>-03</sup>	1.44E <sup>-03</sup>	1.44E <sup>-03</sup>	1.18E <sup>-03</sup>	0.02	0.03	0.01	5.42E <sup>-05</sup>	1.65E <sup>-05</sup> (formaldehyde)
Generator (< 600 hp) Fuel Combustion (RAP screening unit)	0.96	0.96	0.96	0.90	13.58	1.10	2.93	0.012	3.62E <sup>-03</sup> (formaldehyde)
Generator (> 600 hp) Fuel Combustion	0	0	0	0	0	0	0	0	N/A
<b>Worst Case Emissions <sup>α</sup></b>	<b>186.36</b>	<b>79.16</b>	<b>88.42</b>	<b>95.90</b>	<b>48.22</b>	<b>18.11</b>	<b>67.40</b>	<b>10.11</b>	<b>8.82 (HCl)</b>
<b>Fugitive Emissions</b>									
Asphalt Load-Out, Silo Filling, and On-Site Yard <sup>(3)</sup>	0.54	0.54	0.54	0	0	8.35	1.40	0.14	0.04 (formaldehyde)
Material Storage Piles	3.74	1.31	1.31	0	0	0	0	0	N/A
Material Processing and Handling <sup>(3)</sup>	3.15	1.49	0.23	0	0	0	0	0	N/A
Material Screening, and Conveying <sup>(3)</sup>	12.97	4.54	4.54	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case) <sup>(1)</sup>	34.62	8.82	0.88	0	0	0	0	0	N/A
Cold Mix Asphalt Production <sup>(4)</sup>	0	0	0	0	0	52.50	0	13.69	4.73 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	N/A
Volatile Organic Liquid Storage Vessels **	0	0	0	0	0	negl.	0	negl.	negl.
<b>Total Fugitive Emissions</b>	<b>55.01</b>	<b>16.70</b>	<b>7.49</b>	<b>0</b>	<b>0</b>	<b>60.85</b>	<b>1.40</b>	<b>13.83</b>	<b>4.73 (xylenes)</b>
<b>Total Limited/Controlled Emissions</b>	<b>241.37</b>	<b>95.86</b>	<b>95.92</b>	<b>95.90</b>	<b>48.22</b>	<b>78.96</b>	<b>68.80</b>	<b>23.94</b>	<b>8.82 (HCl)</b>
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	N/A	N/A
negl = negligible                      N/A = Not applicable                      HCl = hydrogen chloride * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant." ** Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible. α Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer Process + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Emissions from each of the Generators. (1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP). (4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).									

(a) This existing source is not a major stationary source under PSD (326 IAC 2-2), because no PSD regulated pollutant, excluding GHGs, is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories as specified in 326 IAC 2-2-1(ff)(1).

- (b) This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the Permittee has accepted limits on HAPs emissions to 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. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at [http://www.supremecourt.gov/opinions/13pdf/12-1146\\_4g18.pdf](http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf)) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

#### Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Babcock Paving, Inc. on February 20, 2015, relating to the addition of a new moveable crushing unit (including: feed hopper, crusher, screens, conveyors, and on-board diesel-fired generator) for processing reclaimed asphalt pavement (RAP) and recycled concrete, a radial stacking conveyor, and associated material storage piles. This unit will be dedicated to the site.

The following is a list of the new emission units:

- (a) One (1) Tier 3, 450 hp, #2 diesel fuel-fired Crushing Unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:
- (1) One (1) radial stacking conveyor;
  - (2) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and
  - (3) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart III (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

#### Enforcement Issues

There are no pending enforcement actions related to this revision.

**Emission Calculations**

See the following Appendices to this TSD for detailed emission calculations:

1. A.1: Unlimited Emissions calculations;
2. A.2: Limited Emissions calculations; and
3. A.3: Unlimited PTE of the Revision.

**Permit Level Determination – FESOP Revision**

The following table is used to determine the appropriate permit level under 326 IAC 2-8-11.1 (Permit Revisions). This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	PTE of Proposed Revision (tons/year)								
	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Worst Single HAP
<b>Ducted/Ductable Emissions</b>									
Generator (< 600 hp) Fuel Combustion (Crushing Unit CR1)	4.34	4.34	4.34	4.04	61.10	4.96	13.17	0.05	0.016 (formaldehyde)
<b>Fugitive Emissions</b>									
Material Storage Piles	0.94	0.33	0.33	0	0	0	0	0	NA
Material Processing and Handling	4.32	2.04	0.31	0	0	0	0	0	NA
Material Crushing, Screening, and Conveying	21.21	7.75	7.75	0	0	0	0	0	NA
Unpaved and Paved Roads (worst case)	93.61	23.86	2.39	0	0	0	0	0	NA
<b>Total Fugitive Emissions</b>	<b>120.08</b>	<b>33.98</b>	<b>10.77</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NA</b>
<b>Total PTE of Proposed Revision</b>	<b>124.41</b>	<b>38.31</b>	<b>15.11</b>	<b>4.04</b>	<b>61.10</b>	<b>4.96</b>	<b>13.17</b>	<b>0.05</b>	<b>0.016 (formaldehyde)</b>

- (a) Pursuant to 326 IAC 2-8-11.1(f)(1)(E), this FESOP is being revised through a FESOP Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit revision and the proposed revision involves the construction of new emission units with potential to emit greater than or equal to twenty-five (25) tons per year of PM, PM10, and Nitrogen oxides (NOx); and
- (b) Pursuant to 326 IAC 2-8-11.1(f), this FESOP is being revised through a FESOP Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit revision and the proposed revision involves adjustment of existing PSD Minor PM limits and FESOP PM10, PM2.5, SO2, and HAP limits, and the addition of new PSD Minor PM limits and FESOP PM10, PM2.5, and NOx limits.

**PTE of the Entire Source After Issuance of the FESOP Revision**

The table below summarizes the potential to emit of the entire source (*reflecting adjustment of existing limits*), with updated emissions shown as **bold** values and previous emissions shown as ~~strikethrough~~ values.

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)								
	PM	PM <sub>10</sub> <sup>*</sup>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Worst Single HAP
<b>Ducted/Ductable Emissions</b>									
Dryer Fuel Combustion (worst case) <sup>(1)</sup>	<b>38.79</b> <del>40.50</del>	<b>30.91</b> <del>32.27</del>	<b>30.91</b> <del>32.27</del>	<b>70.56</b> <del>73.67</del>	32.85	1.81	27.59	<b>9.68</b> <del>10.08</del>	<b>8.458.82</b> (HCl)
Dryer/Mixer <sup>(2)</sup> (Process)	<b>161.50</b> <del>185.25</del>	<b>68.00</b> <del>78.00</del>	<b>76.08</b> <del>87.26</del>	<b>24.65</b> <del>28.28</del>	<b>23.38</b> <del>26.84</del>	<b>13.60</b> <del>15.60</del>	<b>55.25</b> <del>63.38</del>	<b>4.53</b> <del>5.20</del>	<b>1.321.51</b> (formaldehyde)
Dryer/Mixer Slag Processing <sup>(2)</sup>	0	0	0	18.50	0	0	0	0	N/A
Hot Oil Heater - Fuel Combustion / Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	0.013	0.010 (hexane)
Generator (< 250 hp) Fuel Combustion (welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	2.43E <sup>-03</sup>	7.42E <sup>-04</sup> (formaldehyde)
Generator (< 250 hp) Fuel Combustion (emergency)	1.44E <sup>-03</sup>	1.44E <sup>-03</sup>	1.44E <sup>-03</sup>	1.18E <sup>-03</sup>	0.02	0.03	0.01	5.42E <sup>-05</sup>	1.65E <sup>-05</sup> (formaldehyde)
Generator (< 600 hp) Fuel Combustion (RC2 & CR1AP screening unit)	<b>4.31</b> <del>0.96</del>	<b>4.31</b> <del>0.96</del>	<b>4.31</b> <del>0.96</del>	<b>4.01</b> <del>0.90</del>	<b>60.68</b> <del>13.58</del>	<b>4.92</b> <del>1.10</del>	<b>13.08</b> <del>2.93</del>	<b>0.053</b> <del>0.012</del>	<b>0.0163.62E<sup>-03</sup></b> (formaldehyde)
Generator (> 600 hp) Fuel Combustion	0	0	0	0	0	0	0	0	N/A
<b>Worst Case Emissions <sup>α</sup></b>	<b>165.95</b> <del>186.36</del>	<b>72.50</b> <del>79.16</del>	<b>80.58</b> <del>88.42</del>	<b>95.90</b>	<b>95.33</b> <del>48.22</del>	<b>19.93</b> <del>18.11</del>	<b>69.43</b> <del>67.40</del>	<b>9.75</b> <del>10.14</del>	<b>8.458.82</b> (HCl)
<b>Fugitive Emissions</b>									
Asphalt Load-Out, Silo Filling, and On-Site Yard <sup>(3)</sup>	<b>0.47</b> <del>0.54</del>	<b>0.47</b> <del>0.54</del>	<b>0.47</b> <del>0.54</del>	0	0	<b>7.28</b> <del>8.35</del>	<b>1.22</b> <del>1.40</del>	<b>0.12</b> <del>0.14</del>	0.04 (formaldehyde)
Material Storage Piles	<b>4.68</b> <del>3.74</del>	<b>1.64</b> <del>1.31</del>	<b>1.64</b> <del>1.31</del>	0	0	0	0	0	N/A
Material Processing and Handling <sup>(3)</sup>	<b>4.45</b> <del>3.45</del>	<b>2.10</b> <del>1.49</del>	<b>0.32</b> <del>0.23</del>	0	0	0	0	0	N/A
Material <b>Crushing</b> , Screening, and Conveying <sup>(3)</sup>	<b>21.84</b> <del>12.97</del>	<b>7.98</b> <del>4.54</del>	<b>7.98</b> <del>4.54</del>	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case) <sup>(1)</sup>	<b>48.61</b> <del>34.62</del>	<b>12.39</b> <del>8.82</del>	<b>1.24</b> <del>0.88</del>	0	0	0	0	0	N/A
Cold Mix Asphalt Production <sup>(4)</sup>	0	0	0	0	0	52.50	0	13.69	4.73 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	N/A
Volatile Organic Liquid Storage Vessels **	0	0	0	0	0	negl.	0	negl.	negl.
<b>Total Fugitive Emissions</b>	<b>80.04</b> <del>55.04</del>	<b>24.57</b> <del>16.70</del>	<b>11.64</b> <del>7.49</del>	<b>0</b>	<b>0</b>	<b>60.85</b>	<b>1.40</b>	<b>13.83</b>	<b>4.73</b> (xylenes)
<b>Total Limited/ Controlled Emissions</b>	<b>245.99</b> <del>241.37</del>	<b>97.08</b> <del>95.86</del>	<b>92.22</b> <del>95.92</del>	<b>95.90</b>	<b>95.33</b> <del>48.22</del>	<b>79.71</b> <del>78.96</del>	<b>70.65</b> <del>68.80</del>	<b>23.56</b> <del>23.94</del>	<b>8.458.82</b> (HCl)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	N/A	N/A
negl = negligible                      N/A = Not applicable                      HCl = hydrogen chloride									
* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant."									
** Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible.									
α Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer Process + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Emissions from each of the Generators.									
(1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).									
(2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).									
(3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP).									
(4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).									

The table below summarizes the potential to emit of the entire source after issuance of this revision, reflecting all limits, of the emission units. (Note: the table below was generated from the above table, with bold text un-bolded and strikethrough text deleted).

Process/ Emission Unit	Potential to Emit of the Entire Source After Issuance of the Revision (tons/year)								
	PM	PM <sub>10</sub> *	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Worst Single HAP
<b>Ducted/Ductable Emissions</b>									
Dryer Fuel Combustion (worst case) <sup>(1)</sup>	38.79	30.91	30.91	70.56	32.85	1.81	27.59	9.68	8.45 (HCl)
Dryer/Mixer <sup>(2)</sup> (Process)	161.50	68.00	76.08	24.65	23.38	13.60	55.25	4.53	1.32 (formaldehyde)
Dryer/Mixer Slag Processing <sup>(2)</sup>	0	0	0	18.50	0	0	0	0	N/A
Hot Oil Heater - Fuel Combustion / Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	0.013	0.010 (hexane)
Generator (< 250 hp) Fuel Combustion (welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	2.43E <sup>-03</sup>	7.42E <sup>-04</sup> (formaldehyde)
Generator (< 250 hp) Fuel Combustion (emergency)	1.44E <sup>-03</sup>	1.44E <sup>-03</sup>	1.44E <sup>-03</sup>	1.18E <sup>-03</sup>	0.02	0.03	0.01	5.42E <sup>-05</sup>	1.65E <sup>-05</sup> (formaldehyde)
Generator (< 600 hp) Fuel Combustion (RC2 & CR1) <sup>(1)</sup>	4.31	4.31	4.31	4.01	60.68	4.92	13.08	0.053	0.016 (formaldehyde)
Generator (> 600 hp) Fuel Combustion	0	0	0	0	0	0	0	0	N/A
<b>Worst Case Emissions <sup>α</sup></b>	<b>165.95</b>	<b>72.50</b>	<b>80.58</b>	<b>95.90</b>	<b>95.33</b>	<b>19.93</b>	<b>69.43</b>	<b>9.75</b>	<b>8.45 (HCl)</b>
<b>Fugitive Emissions</b>									
Asphalt Load-Out, Silo Filling, and On-Site Yard <sup>(3)</sup>	0.47	0.47	0.47	0	0	7.28	1.22	0.12	0.04 (formaldehyde)
Material Storage Piles	4.68	1.64	1.64	0	0	0	0	0	N/A
Material Processing and Handling <sup>(3)</sup>	4.45	2.10	0.32	0	0	0	0	0	N/A
Material Crushing, Screening, and Conveying <sup>(3)</sup>	21.84	7.98	7.98	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case) <sup>(1)</sup>	48.61	12.39	1.24	0	0	0	0	0	N/A
Cold Mix Asphalt Production <sup>(4)</sup>	0	0	0	0	0	52.50	0	13.69	4.73 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	N/A
Volatile Organic Liquid Storage Vessels **	0	0	0	0	0	negl.	0	negl.	negl.
<b>Total Fugitive Emissions</b>	<b>80.04</b>	<b>24.57</b>	<b>11.64</b>	<b>0</b>	<b>0</b>	<b>60.85</b>	<b>1.40</b>	<b>13.83</b>	<b>4.73 (xylenes)</b>
<b>Total Limited/Controlled Emissions</b>	<b>245.99</b>	<b>97.08</b>	<b>92.22</b>	<b>95.90</b>	<b>95.33</b>	<b>79.71</b>	<b>70.65</b>	<b>23.56</b>	<b>8.45 (HCl)</b>
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	N/A	N/A
negl = negligible      N/A = Not applicable      HCl = hydrogen chloride									
* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant."									
** Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible.									
<sup>α</sup> Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer Process + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Emissions from each of the Generators.									
(1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).									
(2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).									
(3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP).									
(4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).									

**PSD Minor and FESOP Status**

This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit PM from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Additionally, this revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants and HAPs from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP).

(a) In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

(1) The amount of hot-mix asphalt processed shall not exceed 850,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

***This is a change from 975,000 tons per twelve (12) consecutive month period. This is a Title I change.***

(2) PM emissions from the dryer/mixer shall not exceed 0.380 pounds per ton of asphalt processed. *This is an existing requirement for this source.*

(3) The Permittee shall control PM emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit. *This is an existing requirement for this source.*

(4) The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

***This is a new requirement for this source. This is a Title I change.***

(5) PM emissions from crushing unit CR1 shall not exceed 0.0054 pounds per ton of material processed.

***This is a new requirement for this source. This is a Title I change.***

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(b) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, PM10, PM2.5, SO2, NOx, VOC, and CO emissions from the dryer/mixer, shall be limited as follows:

(1) The amount of hot-mix asphalt processed shall not exceed 850,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

***This is a change from 975,000 tons per twelve (12) consecutive month period. This is a Title I change.***

(2) The PM10 emissions from the dryer/mixer shall not exceed 0.160 pounds per ton of asphalt processed. *This is an existing requirement for this source.*

(3) The PM2.5 emissions from the dryer/mixer shall not exceed 0.179 pounds per ton of asphalt processed. *This is an existing requirement for this source.*

(4) The SO2 emissions from the dryer/mixer shall not exceed 0.058 pounds per ton of asphalt processed. *This is an existing requirement for this source;*

(5) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed. *This is an existing requirement for this source;*

(6) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed. *This is an existing requirement for this source.*

(7) The Permittee shall control PM10 and PM2.5 emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit. *This is an existing requirement for this source.*

(8) The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

***This is a new requirement for this source. This is a Title I change.***

(9) PM10 emissions from crushing unit CR1 shall not exceed 0.0024 pounds per ton of material processed; and

***This is a new requirement for this source. This is a Title I change.***

(10) PM2.5 emissions from crushing unit CR1 shall not exceed 0.0024 pounds per ton of material processed.

***This is a new requirement for this source. This is a Title I change.***

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO<sub>2</sub>, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, SO<sub>2</sub>, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(c) Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable, SO<sub>2</sub>, NO<sub>x</sub>, and HAP emissions from the dryer/mixer, RAP Screening Unit (RC2), and Crushing Unit (CR1), shall be limited as follows:

***This is a change from only limiting the dryer/mixer, and only limiting SO<sub>2</sub> and HAPS. This is a Title I change.***

(a) Fuel and Slag Specifications

(1) The sulfur content of the No. 2 fuel oil, and the #2 diesel fuel, each, shall not exceed 0.50% by weight.

***This is a change from only limiting the sulfur content of the No. 2 Fuel Oil. This is a Title I change.***

(2) The sulfur content of the No. 4 fuel oil shall not exceed 0.50% by weight. *This is an existing requirement for this source;*

(3) The sulfur content of the waste fuel oil shall not exceed 0.75% by weight. *This is an existing requirement for this source;*

(4) The waste oil combusted shall not contain more than 0.947% ash, 0.200% chlorine, and 0.0089% lead. *This is an existing requirement for this source;*

(5) The HCl emissions shall not exceed 0.0132 pounds of HCl per gallon of waste oil burned. *This is an existing requirement for this source;*

- (6) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight. *This is an existing requirement for this source;*
  - (7) The SO<sub>2</sub> emissions from the blast furnace slag processed in the dryer/mixer shall not exceed 0.740 pounds per ton of blast furnace slag input. *This is an existing requirement for this source;*
  - (8) The sulfur content of the steel slag shall not exceed 0.66% by weight. *This is an existing requirement for this source;*
  - (9) The SO<sub>2</sub> emissions from the steel slag processed in the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag input. *This is an existing requirement for this source;*
- (b) Single Fuel and Slag Usage Limitations:
- (1) When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, the usage of fuel shall be limited as follows:
    - (A) Natural gas usage shall not exceed 657 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source;*
    - (B) No. 2 fuel oil usage shall not exceed 1,987,496 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;  
  
***This is a change from not exceeding 2,075,246 gallons per twelve (12) consecutive month period. This is a Title I change.***
    - (C) No. 4 fuel oil usage shall not exceed 1,881,497 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;  
  
***This is a change from not exceeding 1,964,567 gallons per twelve (12) consecutive month period. This is a Title I change.***
    - (D) Waste oil usage shall not exceed 1,279,930 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;  
  
***This is a change from not exceeding 1,336,440 gallons per twelve (12) consecutive month period. This is a Title I change.***
  - (2) Blast furnace slag usage in the dryer/mixer shall not exceed 50,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source;* and
  - (3) Diesel fuel usage in the RAP screening unit (RC2) and crushing unit (CR1), combined, shall not exceed 200,000 gallons per consecutive twelve (12) month period, with compliance determined at the end of each month.  
  
***This is a new requirement for this source. This is a Title I change.***

Note: The source is only permitted to burn the above-listed fuels in the associated emission units.

***This is a change from only limiting the fuel used in the dryer/mixer burner. This is a Title I change.***

- (c) Multiple Fuel and Slag Usage Limitations:  
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, and diesel fuel usage in the RAP screening unit (RC2) and crushing unit (CR1), combined emissions from the dryer/mixer, RAP screening unit (RC2), and crushing unit (CR1), shall be limited as follows:

***This is a change from only limiting emissions from the dryer/mixer. This is a Title I change.***

- (1) SO<sub>2</sub> emissions shall not exceed 93.07 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

***This is a change from not exceeding 92.17 tons per twelve (12) consecutive month period. This is a Title I change.***

- (2) NO<sub>x</sub> emissions shall not exceed 93.50 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

***This is a new requirement for this source. This is a Title I change.***

- (3) HCl emissions shall not exceed 8.45 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

***This is a change from not exceeding 8.82 tons per twelve (12) consecutive month period. This is a Title I change.***

- (d) Asphalt Shingle Usage Limitation  
Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use certified asbestos-free recycled shingles, post-consumer waste and/or factory seconds, as an additive in its aggregate mix. *This is an existing requirement for this source.*

Compliance with these limits, combined with the potential to emit SO<sub>2</sub>, NO<sub>x</sub>, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO<sub>2</sub> and NO<sub>x</sub> to less than 100 tons per twelve (12) consecutive month period, each, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Compliance with these limits, combined with the potential to emit HAP from all other emission units at this source, shall limit the source-wide total potential to emit of any single HAP to less than ten (10) tons per twelve (12) consecutive month period, total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period shall render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

### Federal Rule Applicability Determination

- (a) *New Source Performance Standards (NSPS)*
- (1) 40 CFR 60, Subpart Dc - Standards for Small Industrial/Commercial/Institutional Steam Generating Units  
The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12),

are not included in the permit, for the 450 hp #2 diesel fuel-fired, crushing unit (CR1), because the crusher is powered by an internal combustion engine (ICE) and not a steam generating unit, as defined in 40 CFR 60.41c.

- (2) 40 CFR 60, Subpart OOO - Standards for Nonmetallic Mineral Processing Plants  
A stationary hot-mix asphalt plant is subject to the New Source Performance Standard for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart OOO (30) (326 IAC 12), whenever a crusher and/or grinding mill is being used to reduce the size of nonmetallic minerals embedded in reclaimed asphalt pavement (RAP) and /or aggregate. This source is adding a crushing unit to supply crushed RAP to supplement the aggregate mix for the hot mix asphalt plant. Additionally, concrete will be crushed for shipment offsite.

Units subject to this rule include the following:

- |                           |   |
|---------------------------|---|
| (A) crushers;             | (E) belt conveyors;                             |
| (B) grinding mills; and   | (F) bagging operations;                         |
| (C) screening operations; | (G) storage bins; and                           |
| (D) bucket elevators;     | (H) enclosed truck or railcar loading stations. |

The Crushing Unit (CR1) is therefore subject to 40 CFR 60, Subpart OOO (included as Attachment D of this permit) as applicable to the facilities being used, as follows:

- |                   |                   |
|-------------------|-------------------|
| (A) 40 CFR 60.670 | (E) 40 CFR 60.674 |
| (B) 40 CFR 60.671 | (F) 40 CFR 60.675 |
| (C) 40 CFR 60.672 | (G) 40 CFR 60.676 |
| (D) 40 CFR 60.673 | (H) Tables 1 - 3. |

*Note: this NSPS includes testing requirements applicable to this source.*

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the RAP crusher and associated affected facilities except as otherwise specified in 40 CFR 60, Subpart OOO.

***Note: this is a new requirement for this source. This is a Title I change.***

- (3) 40 CFR 60, Subpart IIII - NSPS for Stationary Compression Ignition Internal Combustion Engines  
The crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator (Tier 3,450 HP, < 30 liters/cylinder displacement, EPA Certificate of Conformity dated 10/07/2010), is subject the requirements of the 40 CFR 63, Subpart IIII, New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (326 IAC 12), because it is considered a new (*construction commenced after July 11, 2005, and manufactured after April 1, 2006*) stationary compression ignition (CI) internal combustion engine (ICE) at an area source of hazardous air pollutants (HAP), that has never been modified (as defined under §60.14) or reconstructed (as defined under §60.15), and is not fire pump engine. *For the purposes of this rule, the date that construction commences is the date the engine is ordered by the original owner or operator.* Construction of the crushing unit (CR1) commenced in 2014.

The crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, is subject the following applicable portions of 40 CFR 60, Subpart IIII (included as Attachment E of the permit):

- |                             |                                  |
|-----------------------------|----------------------------------|
| (A) 40 CFR 60.4200;         | (G) 40 CFR 60.4211(a), (c), (g); |
| (B) 40 CFR 60.4204(b), (d); | (H) 40 CFR 60.4212;              |
| (C) 40 CFR 60.4206;         | (I) 40 CFR 60.4214(c);           |

- |     |                         |     |                 |
|-----|-------------------------|-----|-----------------|
| (D) | 40 CFR 60.4207(a), (b); | (J) | 40 CFR 60.4218; |
| (E) | 40 CFR 60.4208(a), (e); | (K) | 40 CFR 60.4219; |
| (F) | 40 CFR 60.4209(b);      | (L) | Tables 5 & 8.   |

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the crushing unit (CR1), equipped with a #2 diesel fuel-fired on-board diesel-fired generator except as otherwise specified in 40 CFR 60, Subpart IIII.

**Note: this is a new requirement for this source. This is a Title I change.**

- (4) 40 CFR 60, Subpart JJJJ - NSPS for Stationary Spark Ignition Internal Combustion Engines  
The requirements of the New Source Performance Standard for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE), 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit for the crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, since the crusher is powered by a compression ignition (CI) ICE and not a spark ignition (SI) ICE.
- (5) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR 60) included for this proposed revision.

(b) *National Emission Standards for Hazardous Air Pollutants (NESHAP)*

- (1) 40 CFR 63, Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines  
The crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator (Tier 3,450 HP, < 30 liters/cylinder displacement, EPA Certificate of Conformity dated 10/07/2010), is subject the requirements of 40 CFR 63, Subpart ZZZZ (4Z), the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) (326 IAC 20-82), because it is considered a new stationary compression ignition (CI) RICE at an area source of hazardous air pollutants (HAP). Construction will commence in 2015 (*after June 12, 2006*). Additionally, the unit has never been re-constructed. *For the purposes of this rule, the date that construction commenced is the date on-site fabrication, erection, or installation ("physical" construction) of the affected source (engine) started when the unit was brand new. A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.*

The crushing unit (CR1) is subject the following applicable portions of Subpart ZZZZ (4Z) (included as Attachment C of the permit), with compliance due upon start-up:

- |     |                                       |     |                     |
|-----|---------------------------------------|-----|---------------------|
| (A) | 40 CFR 63.6580;                       | (E) | 40 CFR 63.6665;     |
| (B) | 40 CFR 63.6585;                       | (F) | 40 CFR 63.6670; and |
| (C) | 40 CFR 63.6590(a)(2)(iii) and (c)(1); | (G) | 40 CFR 63.6675.     |
| (D) | 40 CFR 63.6595(a)(7);                 |     |                     |

*Note: There are no testing requirements applicable to this source for this NESHAP.*

Pursuant to 40 CFR 63.6665, the crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, does not have to meet the requirements of 40 CRF 63, Subpart A (General Provisions), since it is considered a new stationary RICE located at an area source of HAP emissions.

**Note: this is a new requirement for this source. This is a Title I change.**

- (2) 40 CFR 63, Subpart JJJJJJ - NESHAPs for Industrial, Commercial, and Institutional Boilers Area Sources  
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJJ (6J), are not included in the permit for the crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, because the unit is an internal combustion engine (ICE) and not a boiler, as defined in 40 CFR 63.11237.
- (3) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.
- (c) *Compliance Assurance Monitoring (CAM)*  
Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

<b>State Rule Applicability Determination - Entire Source</b>
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- (a) 326 IAC 2-8-4 (FESOP)  
This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP). See PTE of the Entire Source After Issuance of the FESOP Revision Section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))  
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.
- (c) 326 IAC 2-1.1-5 (Nonattainment New Source Review)  
Jasper County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, pursuant to 326 IAC 2-1.1-5, the Nonattainment New Source Review requirements do not apply to this revision.
- (d) 326 IAC 2-3 (Emission Offset)  
Jasper County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) do not apply to this revision.
- (e) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))  
The proposed revision is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the new unit(s) 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.
- (f) 326 IAC 2-6 (Emission Reporting)  
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, pursuant to 326 IAC 2-6-1(b), the source is still only subject to additional information requests as provided for in 326 IAC 2-6-5.

- (g) 326 IAC 5-1 (Opacity Limitations)  
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall continue to meet the following, unless otherwise stated in the permit:
- (1) 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.
  - (2) 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.
- (h) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)  
Due to this revision, the source is subject to the requirements of 326 IAC 6-4, because the material storage piles, material processing and handling, material crushing, screening, and conveying, and paved and unpaved roads, each, have the potential to emit fugitive particulate emissions. 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.
- (i) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)  
Due to this revision, the source is subject to the requirements of 326 IAC 6-5, because the material storage piles, material processing and handling, material crushing, screening, and conveying, and paved and unpaved roads, combined, have potential fugitive particulate emissions greater than 25 tons per year. Pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall continue to be controlled according to the existing Fugitive Particulate Emissions Control Plan, which is included as Attachment A to the permit.
- (j) 326 IAC 12 (New Source Performance Standards)  
See Federal Rule Applicability Section of this TSD.
- (k) 326 IAC 20 (Hazardous Air Pollutants)  
See Federal Rule Applicability Section of this TSD.

<b>State Rule Applicability – Individual Facilities</b>
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*Crushing Unit CR1 - Processes - material crushing and screening.*

- (a) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b), the requirements of 326 IAC 6-3-2 are applicable to the crushing unit, identified as CR1, and associated screening operations, since each of these operations has potential particulate emissions greater than five hundred fifty-one thousandths (0.551) pound per hour. Pursuant to 326 IAC 6-3-2, the particulate emissions from the Crushing Unit, identified as CR1, and associated screening operations, shall each not exceed 55.09 pounds per hour when operating at a process weight rate of 145 tons per hour (or 290,000 pounds/hr).

The pound per hour limitation was calculated as follows:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

See Appendix A.3 for the detailed calculations.

*Crushing Unit CR1 - Generator - Reciprocating Internal Combustion Engines (RICE)*

(b) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)  
 The crushing unit (CR1), equipped with a 450 HP on-board #2 diesel fuel-fired generator, is an internal combustion engine and not a source of indirect heating, as defined in 326 IAC 1-2-19 "Combustion for indirect heating". Therefore, the requirements of 326 IAC 6-2 do not apply, and are not included in the permit.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)  
 The unlimited potential to emit SO<sub>2</sub> from the crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, is less than twenty-five (25) tons per year and ten (10) pounds/hour. Therefore, the requirements of 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations) do not apply and are not included in the permit.

See Appendix A.3 for the detailed calculations.

(d) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)  
 The unlimited VOC potential emissions from the crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, are less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-1-6 (General Reduction Requirements for New Facilities) do not apply and are not included in the permit.

See Appendix A.3 for the detailed calculations.

(e) 326 IAC 9-1 (Carbon Monoxide Emission Limits)  
 The crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, is not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 (Carbon Monoxide Emission Limits) still do not apply and are not included in the permit.

(f) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)  
 The crushing unit (CR1), equipped with an on-board #2 diesel fuel-fired generator, does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu). Therefore, the requirements of 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category) do not apply and are not included in the permit.

<b>Compliance Determination, Monitoring and Testing Requirements</b>
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- (a) The compliance determination requirements applicable to this proposed revision are as follows:
- The fuel characteristics (i.e., sulfur, chlorine, and lead content) and fuel usage rates will be used to verify compliance with the SO<sub>2</sub>, NO<sub>x</sub>, and HAP emission limitations.
- (b) The testing requirements applicable to this proposed revision are as follows:

Emission Unit	Control Device	Pollutant	Timeframe for Testing	Frequency of Testing
Crushing Unit (CR1) and associated conveyors, screens, and material transfer points	water sprays	PM, Opacity	Within 180 days after initial use	Once every five (5) years*

\* These testing requirements are required for compliance with 40 CFR 60, Subpart OOO, and 326 IAC 2-8 (FESOP), for fugitive emissions from affected facilities without water sprays. Additionally, affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in §60.674(b) and §60.676(b) are exempt from this 5-year repeat testing requirement.

(c) The compliance monitoring requirements applicable to this proposed revision are as follows:

Emission Unit & Control Device	Parameter	Frequency	Range/Rate	Excursions and Exceedances
Crushing Unit (CR1) and associated conveyors, screens, and material transfer points	Visible Emissions	Once per day	normal/abnormal	Response Steps

These monitoring conditions are necessary to ensure compliance with 40 CFR 60, Subpart OOO.

All other existing compliance requirements will not change as a result of this revision. The source shall continue to comply with the applicable requirements and permit conditions as contained in FESOP No: F073-32549-00041, issued on April 8, 2013.

<b>Proposed Changes</b>
-------------------------

The following changes listed below are due to the proposed revision:

1. Existing Condition A.1 - General Information, the source description has been revised to include the new RAP and recycled concrete crushing activities;
2. Existing Condition A.2 - Emission Units and Pollution Control Equipment Summary, Sections D.1 - Emission Unit Operation Conditions (for the Hot-Mix Asphalt Plant), E.1 - NSPS Requirements (for the Hot-Mix Asphalt Plant), and E.2 - NESHAP Requirements (for Generators) the emission unit descriptions have been revised to include the new crushing unit, identified as CR1;
3. Existing Conditions D.1.1 - PSD Minor Limit: PM, and D.1.2 - FESOP & PSD Minor Limits: PM10, PM2.5, SO2, VOC, and CO, have been revised to reflect the decrease in the hot-mix asphalt production limit, and to add the new crushing unit material throughput limit and corresponding pound per ton (lb/ton) emission limits for PM, PM10, and PM2.5;
4. Existing Condition D.1.3 - FESOP & PSD Minor Limits: SO2 and HAPs, renamed as FESOP & PSD Minor Limits: SO2, NOx, and HAPs, subsection (a) Fuel and Slag Specifications has been revised to include the diesel fuel sulfur content (%) limitation, subsection (b) Single Fuel and Slag Usage Limitations has been revised to adjust the No. 2, No .4, and waste oil fuel usage limits to allow the addition of the diesel fuel needed for the crushing unit and still maintain the FESOP Status of the source. Additionally, a new diesel fuel usage limit has been added for the RAP screening unit (RC2) and crushing unit (CR1), combined. Finally, subsection (c) has been revised to adjust the existing annual SO2 and HAPs emission limits, and to add a new annual NOx emission limit;
5. A new Condition D.1.5 - Particulate Emission Limits has been added to incorporate the requirements of 326 IAC 6-3 for the crushing unit (CR1) and associated conveyors, screens, and material transfer points;
6. Existing Condition D.1.11 - Multiple Fuel and Slag Usage Limitations, renumbered as D.1.12, has been revised to incorporate the addition of the diesel fuel for the RAP screening unit (RC2) and crushing unit (CR1) to the existing compliance determination equations for SO2 and HCL. Additionally, a new compliance determination equation for NOx has been added;
7. Existing Condition D.1.13 - Visible Emissions Notations, renumbered as D.1.14, has been revised to incorporate visible emissions notations requirements for the new crushing unit (CR1);
8. Existing Condition D.1.16 - Record Keeping Requirements, renumbered as D.1.17, has been revised to include reference to the diesel fuel, and to include to include a requirement to keep record of the visible emissions notations for the new crushing unit (CR1);

9. Existing Condition E.2.2 - National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) has been revised to include the applicable requirements for new crushing unit, identified as CR1 by reference;
10. A New Section E.3: NSPS Requirements (for Crushing Unit (CR1)) has been added to the permit to incorporate the requirements of 40 CFR 60, Subpart OOO, for Crushing Unit (CR1) and the associated conveyors, screens, and material transfer points, and a copy of the rule has been attached to the back of the permit;
11. A New Section E.4: NSPS Requirements (for Generators) has been added to the permit to list the applicable sections of 40 CFR 60, Subpart IIII, for Crushing Unit (CR1), and a copy of the rule has been attached to the back of the permit;
12. The FESOP Quarterly Report Form for Hot-mix Asphalt Production, located at the back of the permit, has been revised to reflect the adjustment to the limit;
13. A new FESOP Quarterly Report Forms for Maximum Material Throughput for Crushing Unit CR1 has been to the back of the permit, just following the FESOP Quarterly Report Form for Hot-mix Asphalt Production; and
14. The FESOP Quarterly Report Forms for Fuel & Slag Usage / SO<sub>2</sub> & HCL emissions, renamed as Fuel & Slag Usage / SO<sub>2</sub>, NO<sub>x</sub>, & HCL emissions, located at the back of the permit, have been revised to include the diesel fuel to assist Dave O'Mara in maintaining compliance with the annual SO<sub>2</sub>, NO<sub>x</sub>, and HCL emission limits. Additionally the existing SO<sub>2</sub> and HCL emission limits, and the fuel usage limits, have been updated to reflect the changes being implemented with this revision.

Additionally, IDEM, OAQ has made revisions to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions:

- Condition C.2- Overall Source Limit, of the permit, has been revised to remove the source-wide Minor Source [FESOP] emissions cap and all reference to greenhouse gases (GHGs).

Unaffected permit conditions have been re-numbered and the Table of Contents updated, as applicable. The Permit has been revised as follows, with deleted language shown as ~~strikeouts~~ and new language **bolded**.

A.1 General Information [326 IAC 2-8-3(b)]

---

The Permittee owns and operates a stationary drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation. Blast furnace slag, electric arc furnace steel mill slag, and/or asbestos-free recycled shingles are processed in the aggregate mix. **Reclaimed asphalt pavement (RAP) and recycled concrete are crushed onsite.** This source does not ~~crush~~ ~~recycled asphalt pavement (RAP)~~ or grind any kind of recycled asphalt shingles (RAS), asbestos-free or otherwise, on-site.

\* \* \* \* \*

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

---

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

\* \* \* \* \*

- (b) Material handling and conveying operations, consisting of the following:

\* \* \* \* \*

- (5) **One (1) Tier 3, 450 hp, #2 diesel fuel-fired Crushing Unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum**

**throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:**

- (A) One (1) radial stacking conveyor;**
- (B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and**
- (C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.**

**Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and**

**Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.**

- (56) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and**
- (67) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.**

\*\*\*\*\*

\*\*\*\*\*

**C.2 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) ~~and greenhouse gases (GHGs)~~, from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

\*\*\*\*\*

- ~~(4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e) per twelve (12) consecutive month period.~~

\*\*\*\*\*

**SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Hot-Mix Asphalt (HMA) Plant, RAP Screener, and Hot Oil Heater (HOH)**

\*\*\*\*\*

(b) Material handling and conveying operations, consisting of the following:

\*\*\*\*\*

- (5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including**

- (A) One (1) radial stacking conveyor;
- (B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and
- (C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

- (56) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and
- (67) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

\* \* \* \* \*

#### Emission Limitations and Standards [326 IAC 2-8-4(1)]

##### D.1.1 PSD Minor Limit: PM [326 IAC 2-2]

In order to render 326 IAC 2-2 (**Prevention of Significant Deterioration (PSD)**) not applicable;

- (a) The amount of hot-mix asphalt processed shall not exceed ~~975~~**850**,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; ~~and~~
- (b) PM emissions from the dryer/mixer shall not exceed 0.380 pounds per ton of asphalt processed;-
- (c) The Permittee shall control PM emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit;-
- (d) **The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and**
- (e) **PM emissions from crushing unit CR1 shall not exceed 0.0054 pounds per ton of material processed.**

\* \* \* \* \*

##### D.1.2 FESOP & PSD Minor Limits: PM10, PM2.5, SO2, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-8-4 (**FESOP**), and in order to render **the requirements of 326 IAC 2-7 (Part 70 Permits)** and 326 IAC 2-2 (**Prevention of Significant Deterioration (PSD)**) not applicable, the Permittee shall comply with the following:

- (a) The amount of hot-mix asphalt processed shall not exceed ~~975~~**850**,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

\* \* \* \* \*

- (g) **The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.**
- (h) **PM10 emissions from crushing unit CR1 shall not exceed 0.0024 pounds per ton of material processed; and**
- (i) **PM2.5 emissions from crushing unit CR1 shall not exceed 0.0024 pounds per ton of material processed.**

\* \* \* \* \*

D.1.3 FESOP & PSD Minor Limits: SO<sub>2</sub>, NO<sub>x</sub>, and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to render **the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))** not applicable, the Permittee shall comply with the following:

(a) Fuel and Slag Specifications

- (1) The sulfur content of the No. 2 fuel oil, **and the #2 diesel fuel, each**, shall not exceed 0.50% by weight.

\* \* \* \* \*

(b) Single Fuel and Slag Usage Limitations:

- (1) When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, the usage of fuel shall be limited as follows:

\* \* \* \* \*

- (B) No. 2 fuel oil usage shall not exceed **1,987,496**~~2,075,246~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (C) No. 4 fuel oil usage shall not exceed **1,881,497**~~1,964,567~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (D) Waste oil usage shall not exceed **1,279,930**~~1,336,440~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; ~~and~~

~~Note: The source is only permitted to burn the above-listed fuels.~~

- (2) Blast furnace slag usage **in the dryer/mixer** shall not exceed 50,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; **and**
- (3) **Diesel fuel usage in the RAP screening unit (RC2) and crushing unit (CR1), combined, shall not exceed 200,000 gallons per consecutive twelve (12) month period, with compliance determined at the end of each month.**

**Note: The source is only permitted to burn the above-listed fuels in the associated emission units.**

(c) Multiple Fuel and Slag Usage Limitations:

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, **and diesel fuel usage in the RAP screening unit (RC2) and crushing unit (CR1), combined emissions from the dryer/mixer, RAP screening unit (RC2), and crushing unit (CR1), shall be limited as follows:**

- (1) SO<sub>2</sub> emissions shall not exceed ~~92.17~~**93.07** tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) **NO<sub>x</sub> emissions shall not exceed 93.50 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and**
- (23) HCl emissions shall not exceed ~~8.458~~**8.2** tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

\* \* \* \* \*

Compliance with these limits, combined with the potential to emit SO<sub>2</sub>, **NO<sub>x</sub>**, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO<sub>2</sub> and **NO<sub>x</sub>** to less than 100 tons per twelve (12) consecutive month period, each, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

\* \* \* \* \*

**D.1.5 Particulate Emission Limits for Manufacturing Processes [326 IAC 6-3]**

Pursuant to 326 IAC 6-3-2(e), particulate emissions from the crushing unit, identified as CR1, and associated screening operations, shall each not exceed 55.09 pounds per hour when operating at a process weight rate of 145 tons per hour (or 290,000 pounds/hr).

The pounds per hour limitations were calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

\* \* \* \* \*

**D.1.56 Sulfur Dioxide (SO<sub>2</sub>) [326 IAC 7-1.1-1] [326 IAC 7-2-1]**

\* \* \* \* \*

**D.1.67 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

\* \* \* \* \*

**D.1.78 Particulate Control (PM/PM10/PM2.5)**

\* \* \* \* \*

**D.1.89 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]**

\* \* \* \* \*

**D.1.910 Sulfur Dioxide (SO<sub>2</sub>) Emissions and Sulfur Content**

*Fuel Oil*

- (a) Compliance with the fuel limitations established in Conditions D.1.3(a)(1), D.1.3(a)(2), **D.1.3(a)(3)**, D.1.65(a), and D.1.65(b) shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), and 326 IAC 3-7-4 (Fuel oil sampling; analysis methods), compliance shall be demonstrated on a thirty (30) day calendar-month average.

\* \* \* \* \*

**D.1.1011 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content**

The Permittee shall demonstrate compliance with the waste oil ash, chlorine, and lead content limits established in Condition D.1.3(a)(~~4~~3), by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

\* \* \* \* \*

D.1.1244 Multiple Fuel and Slag Usage Limitations

In order to comply with the Condition D.1.3(c), when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, **and diesel fuel in the RAP screening unit (RC2) and crushing unit (CR1)**, the Permittee shall limit fuel and slag usage according to the following formulas:

(a) Sulfur Dioxide (SO<sub>2</sub>) Emission Calculation

$$S = \frac{G(E_G) + O(E_O) + F(E_F) + W(E_W) + B(E_B) + T(E_T) + D(E_D)}{2,000 \text{ lbs/ton}}$$

where:

S = tons of sulfur dioxide emissions for a 12-month consecutive period

G = million cubic feet of natural gas used in the **dryer/mixer burner in the last 12 months**

O = gallons of No. 2 fuel oil used in the **dryer/mixer burner in the last 12 months**

F = gallons of No. 4 fuel oil used in the **dryer/mixer burner in the last 12 months**

W = gallons of waste oil used in the **dryer/mixer burner in the last 12 months**

B = tons of blast furnace slag used in **dryer/mixer in the last 12 months**

T = tons of steel slag used in the **dryer/mixer in the last 12 months**

**D = gallons of #2 diesel fuel used in the RAP screening unit (RC2) and crushing unit (CR1), combined, in the last 12 months**

E<sub>G</sub> = 0.6 lbs/MMCF of natural gas

E<sub>O</sub> = 0.071 lbs/gallon of No. 2 fuel oil

E<sub>F</sub> = 0.075 lbs/gallon of No. 4 fuel oil

E<sub>W</sub> = 0.1103 lbs/gallon of waste oil

E<sub>B</sub> = 0.74 lbs/ton of blast furnace slag input

E<sub>T</sub> = 0.0014 lbs/ton of steel slag input

**E<sub>D</sub> = 0.0401 lbs/gallon of diesel fuel**

(b) Nitrogen Oxides (NO<sub>x</sub>) Emission Calculation

$$N = \frac{G(E_G) + O(E_O) + F(E_F) + W(E_W) + D(E_D)}{2,000 \text{ lbs/ton}}$$

N = tons of nitrogen oxide emissions for a 12-month consecutive period

G = million cubic feet of natural gas used in the dryer/mixer burner in the last 12 months

O = gallons of No. 2 fuel oil used in the dryer/mixer burner in the last 12 months

F = gallons of No. 4 fuel oil used in the dryer/mixer burner in the last 12 months

W = gallons of waste oil used in the dryer/mixer burner in the last 12 months

**D = gallons of #2 diesel fuel used in the RAP screening unit (RC2) and crushing unit (CR1), combined, in the last 12 months**

E<sub>G</sub> = 100 lbs/MMCF of natural gas

E<sub>O</sub> = 0.020 lbs/gallon of No. 2 fuel oil

E<sub>F</sub> = 0.020 lbs/gallon of No. 4 fuel oil

E<sub>W</sub> = 0.019 lbs/gallon of waste oil

**E<sub>D</sub> = 0.607 lbs/gallon of diesel fuel**

(bc) Hydrogen Chloride (HCl) Emission Calculation:

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

D.1.1213 Shingle Asbestos Content

\* \* \* \* \*

**D.1.1314**      Visible Emissions Notations

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- (a) Visible emission notations of the conveyors, screens, material transfer points, and the dryer/mixer stack (S1) exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) Visible emission notations of the crushing unit (CR1) and associated conveyors, screens, and material transfer points, shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.**
- (bc) 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.
- (ed) 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.
- (de) 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.
- (ef) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. An abnormal visible emission notation is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

\* \* \* \* \*

**D.1.1415**      Parametric Monitoring

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\* \* \* \* \*

**D.1.1516**      Broken or Failed Bag Detection

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\* \* \* \* \*

**D.1.1746**      Record Keeping Requirements

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\* \* \* \* \*

- (b) To document the compliance status with Conditions D.1.3, D.1.65, D.1.89, D.1.1140, D.1.1244, and D.1.1342, the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.3, D.1.65, D.1.89, D.1.1140, D.1.1244, and D.1.1342, .
  - \* \* \* \* \*
  - (5) If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
    - \* \* \* \* \*
    - (C) A statement from the fuel supplier that certifies the sulfur content of the No. 2 fuel oil, the No. 4 fuel oil, ~~and~~ the waste oil, **and the diesel fuel**, and the ash, chlorine, and lead content of the waste oil.
    - \* \* \* \* \*
- (d) To document the compliance status with Condition D.1.1314(a), the Permittee shall maintain records of visible emission notations of the conveyors, screens, material transfer points, and dryer/mixer stack (S1) exhaust 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 process did not operate that day).
- (e) To document the compliance status with Condition D.1.14(b), the Permittee shall maintain records of visible emission notations of the crushing unit (CR1) and associated conveyors, screens, and material transfer points 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 process did not operate that day).**

- (ef) To document the compliance status with Condition D.1.4415, the Permittee shall maintain records once per day of the pressure drop during normal operation. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).
- (fg) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

**D.1.4718 Reporting Requirements**

Quarterly summaries of the information to document compliance status with Conditions D.1.1(a), D.1.2(a), D.1.3, and D.1.4412 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

\* \* \* \* \*

**SECTION E.1**

**NSPS REQUIREMENTS**

Emissions Unit Description: Hot-Mix Asphalt (HMA) Plant

\* \* \* \* \*

- (b) Material handling and conveying operations, consisting of the following:

\* \* \* \* \*

- (5) **One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:**

- (A) **One (1) radial stacking conveyor;**
- (B) **Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and**
- (C) **Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.**

**Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and**

**Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.**

- (56) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and
- (67) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

\* \* \* \* \*

\*\*\*\*\*

SECTION E.2

NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: Generators

(b) Material handling and conveying operations, consisting of the following:

\*\*\*\*\*

**(5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:**

- (A) One (1) radial stacking conveyor;**
- (B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and**
- (C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.**

**Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and**

**Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.**

\*\*\*\*\*

**National Emission Standards for Hazardous Air Pollutants (NESHAPs) Requirements [326 IAC 2-8-4(1)]**

E.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) [40 CFR 63, Subpart ZZZZ] [326 IAC 20-82]

Pursuant to 40 CFR Part 60, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart ZZZZ (4Z) (included as Attachment C), which are incorporated by reference as 326 IAC 20-82, for the following generators:

\*\*\*\*\*

**(b) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, with compliance due upon start-up, as follows:**

- (A) 40 CFR 63.6580;**
- (B) 40 CFR 63.6585;**
- (C) 40 CFR 63.6590(a)(2)(iii) and (c)(1);**
- (D) 40 CFR 63.6595(a)(7);**
- (E) 40 CFR 63.6665;**
- (F) 40 CFR 63.6670; and**
- (G) 40 CFR 63.6675.**

**(bc) One (1) 20 hp gasoline-fired spark ignition, 4-stroke lean burn, portable maintenance welding unit, with a compliance date of October 19, 2013, as follows:**

\*\*\*\*\*

**(ed) One (1) 8 hp gasoline-fired, spark ignition, portable emergency generator, with a compliance date of October 19, 2013, as follows:**

\*\*\*\*\*

\* \* \* \* \*

**SECTION E.3**

**NSPS REQUIREMENTS**

**Emissions Unit Description: Crushing Unit (CR1)**

**(b) Material handling and conveying operations, consisting of the following:**

- (5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:**
  - (A) One (1) radial stacking conveyor;**
  - (B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and**
  - (C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.**

**Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and**

**Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.**

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

**New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]**

**E.2.1 General Provisions Relating to New Source Performance Standards (NSPS) [326 IAC 12] [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, except as otherwise specified in 40 CFR 60, Subpart OOO.**
- (b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:**

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

**E.3.2 Standards of Performance for Nonmetallic Mineral Processing Plants (NSPS) [326 IAC 12] [40 CFR Part 60, Subpart OOO]**

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart OOO (included as Attachment D of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart OOO:

- |     |               |     |               |
|-----|---------------|-----|---------------|
| (a) | 40 CFR 60.670 | (e) | 40 CFR 60.674 |
| (b) | 40 CFR 60.671 | (f) | 40 CFR 60.675 |
| (c) | 40 CFR 60.672 | (g) | 40 CFR 60.676 |
| (d) | 40 CFR 60.673 | (h) | Tables 1 - 3  |

\*\*\*\*\*

**SECTION E.4**

**NSPS REQUIREMENTS**

**Emissions Unit Description: Generators**

(b) Material handling and conveying operations, consisting of the following:

(5) One (1) Tier 3, 450 hp, #2 diesel fuel-fired crushing unit, identified as CR1, approved in 2015 for construction, for processing reclaimed asphalt pavement (RAP) and recycled concrete, consisting of one (1) feed bin, one (1) two deck screening system, and four (4) conveyors, with a maximum throughput capacity of 145 tons of RAP or concrete per hour, controlling particulate emissions with water spray, and including:

(A) One (1) radial stacking conveyor;

(B) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 2.5 acres; and

(C) Recycled concrete storage pile(s), with a maximum anticipated pile size of 2.0 acres.

Under 40 CFR 60, Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility; and

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

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

**New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]**

**E.4.1 General Provisions Relating to New Source Performance Standards (NSPS) [326 IAC 12] [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, as specified in Table 8 of 40 CFR Part 60, Subpart IIII, except as otherwise specified in 40 CFR 60, Subpart IIII.
- (b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

**E.4.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS) [326 IAC 12] [40 CFR Part 60, Subpart IIII]**

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The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart IIII (included as Attachment E of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart IIII:

- |     |                         |     |                              |
|-----|-------------------------|-----|------------------------------|
| (a) | 40 CFR 60.4200;         | (g) | 40 CFR 60.4211(a), (c), (g); |
| (b) | 40 CFR 60.4204(b), (d); | (h) | 40 CFR 60.4212;              |
| (c) | 40 CFR 60.4206;         | (i) | 40 CFR 60.4214(c);           |
| (d) | 40 CFR 60.4207(a), (b); | (j) | 40 CFR 60.4218;              |
| (e) | 40 CFR 60.4208(a), (e); | (k) | 40 CFR 60.4219;              |
| (f) | 40 CFR 60.4209(b);      | (l) | Tables 5 & 8.                |

\* \* \* \* \*

FESOP QUARTERLY REPORT

Source Name: Babcock Paving, Inc.  
Source Address: 6049 Work Street, Demotte, Indiana 46310  
FESOP Permit No.: F073-32549-00041  
Facility: Dryer/Mixer  
Parameter: Hot-mix Asphalt Production  
Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed ~~850~~75,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

\* \* \* \* \*

\* \* \* \* \*

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

**FESOP QUARTERLY REPORT**

**Source Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**FESOP Permit No.:** F073-32549-00041  
**Facility:** Crushing Unit CR1  
**Parameter:** Maximum Material Throughput  
**Limit:** The amount of material processed in crushing unit CR1, shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	Material Throughput This Month (tons)	Material Throughput Previous 11 Months (tons)	12 Month Total Material Throughput (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
 Deviation has been reported on: \_\_\_\_\_

**Submitted by:** \_\_\_\_\_  
**Title / Position:** \_\_\_\_\_  
**Signature:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**Phone:** \_\_\_\_\_

\*\*\*\*\*

FESOP QUARTERLY REPORT

Source Name: Babcock Paving, Inc.  
 Source Address: 6049 Work Street, Demotte, Indiana 46310  
 FESOP Permit No.: F073-32549-00041  
 Facility: Dryer/Mixer  
 Parameter: Fuel & Slag Usage / SO<sub>2</sub>, **NO<sub>x</sub>**, & HCl emissions  
 Emission Limits: Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed ~~93.0792~~<sup>17</sup> tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.124(a).  
Nitrogen Oxide (NO<sub>x</sub>) emissions shall not exceed **93.50 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(b).**  
Hydrogen Chloride (HCl) emissions shall not exceed ~~8.458~~<sup>82</sup> tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.124~~(bc)~~.

Fuel & Slag Limits: When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, fuel and slag usage shall not exceed the following:

Fuel Type (Units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	657
No. 2 Fuel Oil (gallons)	<b>1,987,496</b> <del>2,075,246</del>
No. 4 Fuel Oil (gallons)	<b>1,881,497</b> <del>1,964,567</del>
Waste Oil (gallons)	<b>1,279,930</b> <del>1,336,440</del>
Blast Furnace Slag (tons)	50,000
<b>Diesel Fuel (gallons)</b>	<b>200,000</b>

\*\*\*\*\*

FESOP QUARTERLY REPORT - FUEL & SLAG USAGE / SO<sub>2</sub> & HCl EMISSIONS Page 2 of 3

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Fuel Types / Slag (units)	Column 1	Column 2	Column 1 + Column 2	Equation Results	
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	Sulfur Dioxide (SO <sub>2</sub> ) Emissions (tons per 12 months)	Hydrogen Chloride (HCl) Emissions (tons per 12 months)
Month 1	*****					
	<b>Diesel Fuel Usage (gallons)</b>					
Month 2	*****					
	<b>Diesel Fuel Usage (gallons)</b>					
Month 3	*****					
	<b>Diesel Fuel Usage (gallons)</b>					

\*\*\*\*\*

No other changes have been made to the permit as a result of this revision.

### Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on February 20, 2015. Additional information was received on March 6, 2015.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 073-35486-00041. The staff recommends to the Commissioner that this FESOP Significant Permit Revision be approved.

### IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Ms. Hannah Desrosiers at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-9327 or toll free at 1-800-451-6027 extension 3-9327.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

**Appendix A.1: Unlimited Emissions Calculations**  
**Entire Source - Drum mix**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Asphalt Plant Maximum Capacity - Drum Mix**

Maximum Hourly Asphalt Production =	225	ton/hr								
Maximum Annual Asphalt Production =	1,971,000	ton/yr								
Maximum Annual Blast Furnace Slag Usage =	827,820	ton/yr	1.50	% sulfur						
Maximum Annual Steel Slag Usage =	1,971,000	ton/yr	0.66	% sulfur						
Crushing Unit (CR1) Maximum Material Throughput =	1,270,200	ton/yr								
Maximum Dryer Fuel Input Rate =	75.0	MMBtu/hr								
Natural Gas Usage =	657	MMCF/yr								
No. 2 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur						
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	4,692,857	gal/yr, and	0.75	% sulfur	0.947	% ash	0.200	% chlorine,	0.0089	% lead
Gasoline Usage - Generator < 250 HP =	10,260	gal/yr, and								
Diesel Fuel Usage - Generator < 600 HP =	246,121	gal/yr, and								
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0.00	% sulfur						
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production						0.0054	lb/ton of material processed	
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production						0.0024	lb/ton of material processed	
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production						0.0024	lb/ton of material processed	
Unlimited SO2 Dryer/Mixer Emission Factor =	0.058	lb/ton of asphalt production								
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production								
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production								
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production								
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed								
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed								
Unlimited PM Crusher Emission Factor =								0.0054	lb/ton of material processed	
Unlimited PM10 Crusher Emission Factor =								0.0024	lb/ton of material processed	
Unlimited PM2.5 Crusher Emission Factor =								0.0024	lb/ton of material processed	

**Unlimited/Uncontrolled Emissions**

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)								
	Criteria Pollutants							Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
<b>Ducted Emissions</b>									
Dryer Fuel Combustion (worst case)	142.21	113.33	113.33	258.69	46.93	2.35	27.59	33.70	30.97 (hydrogen chloride)
Dryer/Mixer (Process)	27,594.00	6,405.75	1,478.25	57.16	54.20	31.54	128.12	10.50	3.06 (formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	306.29	0	0	0	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	0.013	0.010 (hexane)
Gasoline-Fired Generator < 250 HP (Maint. Welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	2.43E-03	7.42E-04 (formaldehyde)
Gasoline-Fired Generator < 250 HP (Emergency Gen.)	1.44E-03	1.44E-03	1.44E-03	1.18E-03	0.02	0.03	0.01	5.42E-05	1.65E-05 (formaldehyde)
Diesel-Fired Generator < 600 HP (RAP Screener (RC2))	0.96	0.96	0.96	0.90	13.58	1.10	2.93	0.012	3.62E-03 (formaldehyde)
Diesel-Fired Generator < 600 HP (Crushing Unit (CR1))	4.34	4.34	4.34	4.04	61.10	4.96	13.17	0.053	0.016 (formaldehyde)
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	NA
<b>Worst Case Emissions*</b>	<b>27,599.44</b>	<b>6,411.25</b>	<b>1,483.75</b>	<b>572.76</b>	<b>130.67</b>	<b>39.00</b>	<b>145.31</b>	<b>33.78</b>	<b>30.97 (hydrogen chloride)</b>
<b>Fugitive Emissions</b>									
Asphalt Load-Out, Silo Filling, On-Site Yard	1.09	1.09	1.09	0	0	16.88	2.84	0.28	0.09 (formaldehyde)
Material Storage Piles	4.68	1.64	1.64	0	0	0	0	0	0
Material Processing and Handling	10.69	5.05	0.77	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	52.48	19.17	19.17	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	116.80	29.77	2.98	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	23,686.49	0	6,178.31	2,131.78 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	0
<b>Total Fugitive Emissions</b>	<b>185.73</b>	<b>56.72</b>	<b>25.64</b>	<b>0</b>	<b>0</b>	<b>23,703.37</b>	<b>2.84</b>	<b>6,178.60</b>	<b>2,131.78 (xylenes)</b>
<b>Totals Unlimited/Uncontrolled PTE</b>	<b>27,785.18</b>	<b>6,467.97</b>	<b>1,509.39</b>	<b>572.76</b>	<b>130.67</b>	<b>23,742.37</b>	<b>148.15</b>	<b>6,212.38</b>	<b>2,131.78 (xylenes)</b>

negl = negligible

NA = not applicable

Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.

\*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Worst Case Emissions From Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP  
 Fuel component percentages provided by the source.

**Appendix A.1: Unlimited Emissions Calculations  
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

**Maximum Capacity**

Maximum Fuel Input Rate =	75	MMBtu/hr																
Natural Gas Usage =	657	MMCF/yr																
No. 2 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur														
No. 4 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur														
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur														
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur														
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur														
Used/Waste Oil Usage =	4,692,857	gal/yr, and	0.75	% sulfur	0.95	% ash	0.200	% chlorine	0.009	% lead								

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)										Unlimited/Uncontrolled Potential to Emit (tons/yr)						
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)		
PM	1.9	2.0	7.0	3.22	0.5	0.6	60.6	0.62	4.69	16.43	0.00	0.00	142.21	142.21			
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	48.297	2.50	7.74	19.48	0.00	0.00	113.33	113.33			
SO2	0.6	71.0	75.0	0.0	0.000	0.000	110.3	0.20	166.60	175.98	0.00	0.00	258.69	258.69			
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	32.85	46.93	46.93	0.00	0.00	44.58	46.93			
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	1.81	0.47	0.47	0.00	0.00	2.35	2.35			
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	27.59	11.73	11.73	0.00	0.00	11.73	27.59			
<b>Hazardous Air Pollutant</b>																	
HCl							13.2							30.97	30.97		
Antimony			5.25E-03	5.25E-03			negl			1.23E-02	0.00E+00			negl	0.0123188		
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	6.6E-05	1.31E-03	3.10E-03	0.00E+00			2.58E-01	0.258		
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	3.9E-06	9.86E-04	6.52E-05	0.00E+00			negl	9.9E-04		
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	3.6E-04	9.86E-04	9.34E-04	0.00E+00			2.18E-02	0.022		
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	4.6E-04	9.86E-04	1.98E-03	0.00E+00			4.69E-02	0.047		
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	2.8E-05		1.41E-02	0.00E+00			4.93E-04	1.4E-02		
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.4895	1.6E-04	2.96E-03	3.54E-03	0.00E+00			1.1E+00	1.15		
Manganese	3.8E-04	3.4E-04	3.00E-03	3.00E-03			6.8E-02	1.2E-04	1.97E-03	7.04E-03	0.00E+00			1.60E-01	0.16		
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				9.5E-05	9.86E-04	2.65E-04	0.00E+00				9.9E-04		
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	6.9E-04	9.86E-04	1.98E-01	0.00E+00			2.58E-02	0.198		
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04				7.9E-06	4.93E-03	1.60E-03	0.00E+00			negl	4.9E-03		
1,1,1-Trichloroethane			2.36E-04	2.36E-04						5.54E-04	0.00E+00				0.0005538		
1,3-Butadiene															0		
Acetaldehyde															0		
Acrolein															0		
Benzene	2.1E-03		2.14E-04	2.14E-04				6.9E-04		5.02E-04	0.00E+00				6.9E-04		
Bis(2-ethylhexyl)phthalate								2.2E-03						5.16E-03	5.2E-03		
Dichlorobenzene	1.2E-03							8.0E-07	3.9E-04					1.88E-06	3.9E-04		
Ethylbenzene			6.36E-05	6.36E-05						1.49E-04	0.00E+00				0.0001492		
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				2.5E-02	1.43E-01	7.74E-02	0.00E+00				0.143		
Hexane	1.8E+00								0.59						0.591		
Phenol								2.4E-03						5.63E-03	5.6E-03		
Toluene	3.4E-03		6.20E-03	6.20E-03				1.1E-03		1.45E-02	0.00E+00				1.5E-02		
Total PAH Haps	negl		1.13E-03	1.13E-03				negl		2.65E-03	0.00E+00			9.17E-02	0.092		
Polycyclic Organic Matter		3.30E-03							7.74E-03						7.7E-03		
Xylene			1.09E-04	1.09E-04						2.56E-04	0.00E+00				0.0002558		
<b>Total HAPs</b>							<b>0.62</b>	<b>0.17</b>	<b>0.34</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>32.74</b>	<b>33.70</b>			

**Methodology**

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 MMCF/1,000 MMBtu]  
 Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.140 MMBtu]  
 Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.0905 MMBtu]  
 Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.0974 MMBtu]  
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] \* [Emission Factor (lb/MMCF)] \* [ton/2000 lbs]  
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] \* [Emission Factor (lb/kgal)] \* [kgal/1000 gal] \* [ton/2000 lbs]  
 Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
- Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

\*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

**Abbreviations**

- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (< 2.5 um)
- SO2 = Sulfur Dioxide
- NOx = Nitrous Oxides
- VOC = Volatile Organic Compounds
- CO = Carbon Monoxide
- HAP = Hazardous Air Pollutant
- HCl = Hydrogen Chloride
- PAH = Polyaromatic Hydrocarbon

**Appendix A.1: Unlimited Emissions Calculations  
Dryer/Mixer Process Emissions**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =  ton/hr  
 Maximum Annual Asphalt Production =  ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	27,594	27,594	27,594	<b>27,594</b>
PM10*	6.5	6.5	6.5	6,406	6,406	6,406	<b>6,406</b>
PM2.5*	1.5	1.5	1.5	1,478	1,478	1,478	<b>1,478</b>
SO2**	0.0034	0.011	0.058	3.4	10.8	57.2	<b>57.2</b>
NOx**	0.026	0.055	0.055	25.6	54.2	54.2	<b>54.2</b>
VOC**	0.032	0.032	0.032	31.5	31.5	31.5	<b>31.5</b>
CO***	0.13	0.13	0.13	128.1	128.1	128.1	<b>128.1</b>
<b>Hazardous Air Pollutant</b>							
HCl			2.10E-04			2.07E-01	<b>0.21</b>
Antimony	1.80E-07	1.80E-07	1.80E-07	1.77E-04	1.77E-04	1.77E-04	<b>1.77E-04</b>
Arsenic	5.60E-07	5.60E-07	5.60E-07	5.52E-04	5.52E-04	5.52E-04	<b>5.52E-04</b>
Beryllium	negl	negl	negl	negl	negl	negl	<b>0</b>
Cadmium	4.10E-07	4.10E-07	4.10E-07	4.04E-04	4.04E-04	4.04E-04	<b>4.04E-04</b>
Chromium	5.50E-06	5.50E-06	5.50E-06	5.42E-03	5.42E-03	5.42E-03	<b>5.42E-03</b>
Cobalt	2.60E-08	2.60E-08	2.60E-08	2.56E-05	2.56E-05	2.56E-05	<b>2.56E-05</b>
Lead	6.20E-07	1.50E-05	1.50E-05	6.11E-04	1.48E-02	1.48E-02	<b>1.48E-02</b>
Manganese	7.70E-06	7.70E-06	7.70E-06	7.59E-03	7.59E-03	7.59E-03	<b>7.59E-03</b>
Mercury	2.40E-07	2.60E-06	2.60E-06	2.37E-04	2.56E-03	2.56E-03	<b>2.56E-03</b>
Nickel	6.30E-05	6.30E-05	6.30E-05	0.06	0.06	0.06	<b>0.06</b>
Selenium	3.50E-07	3.50E-07	3.50E-07	3.45E-04	3.45E-04	3.45E-04	<b>3.45E-04</b>
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.04	0.04	0.04	<b>0.04</b>
Acetaldehyde			1.30E-03			1.28	<b>1.28</b>
Acrolein			2.60E-05			2.56E-02	<b>0.03</b>
Benzene	3.90E-04	3.90E-04	3.90E-04	0.38	0.38	0.38	<b>0.38</b>
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.24	0.24	0.24	<b>0.24</b>
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	3.06	3.06	3.06	<b>3.06</b>
Hexane	9.20E-04	9.20E-04	9.20E-04	0.91	0.91	0.91	<b>0.91</b>
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.05	0.05	0.05	<b>0.05</b>
MEK			2.00E-05			0.02	<b>0.02</b>
Propionaldehyde			1.30E-04			0.13	<b>0.13</b>
Quinone			1.60E-04			0.16	<b>0.16</b>
Toluene	1.50E-04	2.90E-03	2.90E-03	0.15	2.86	2.86	<b>2.86</b>
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.19	0.87	0.87	<b>0.87</b>
Xylene	2.00E-04	2.00E-04	2.00E-04	0.20	0.20	0.20	<b>0.20</b>
<b>Total HAPs</b>							<b>10.50</b>
<b>Worst Single HAP</b>							<b>3.06 (formaldehyde)</b>

**Methodology**  
 Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

\* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

\*\* SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

\*\*\* CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

**Abbreviations**

PM = Particulate Matter      SO2 = Sulfur Dioxide      CO = Carbon Monoxide      PAH = Polyaromatic Hydrocarbon  
 PM10 = Particulate Matter (<10 um)      NOx = Nitrous Oxides      HAP = Hazardous Air Pollutant  
 PM2.5 = Particulate Matter (< 2.5 um)      VOC = Volatile Organic Compounds      HCl = Hydrogen Chloride

**Appendix A.1: Unlimited Emissions Calculations  
Dryer/Mixer Slag Processing**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the unlimited emissions from the processing of slag in the aggregate drying/mixing

Maximum Annual Blast Furnace Slag Usage = 

827,820
---------

 ton/yr      

1.50
------

 % sulfur  
Maximum Annual Steel Slag Usage = 

1,971,000
-----------

 ton/yr      

0.66
------

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.74	306.29
Steel Slag**	0.0014	1.38

**Methodology**

The maximum annual slag usage was provided by the source.

\* Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

\*\* Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Unlimited Potential to Emit SO2 from Slag (tons/yr) = [(Maximum Annual Slag Usage (ton/yr)) \* [Emission Factor (lb/ton)] \* [ton/2000 lbs]

**Abbreviations**

SO2 = Sulfur Dioxide

**Appendix A.1: Unlimited Emissions Calculations  
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr  
Hot Oil Heater**

**Company Name:** Babcock Paving, Inc.  
**Source Location:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 1.25 MMBtu/hr  
 Natural Gas Usage = 11 MMCF/yr  
 No. 2 Fuel Oil Usage = 78,214 gal/yr, and 0.50 % sulfur

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.010	0.078	0.08
PM10/PM2.5	7.6	3.3	0.042	0.129	0.13
SO2	0.6	71.0	0.003	2.777	2.78
NOx	100	20.0	0.548	0.782	0.78
VOC	5.5	0.20	0.030	0.008	0.03
CO	84	5.0	0.460	0.196	0.46
<b>Hazardous Air Pollutant</b>					
Arsenic	2.0E-04	5.6E-04	1.1E-06	2.19E-05	2.2E-05
Beryllium	1.2E-05	4.2E-04	6.6E-08	1.64E-05	1.6E-05
Cadmium	1.1E-03	4.2E-04	6.0E-06	1.64E-05	1.6E-05
Chromium	1.4E-03	4.2E-04	7.7E-06	1.64E-05	1.6E-05
Cobalt	8.4E-05		4.6E-07		4.6E-07
Lead	5.0E-04	1.3E-03	2.7E-06	4.93E-05	4.9E-05
Manganese	3.8E-04	8.4E-04	2.1E-06	3.29E-05	3.3E-05
Mercury	2.6E-04	4.2E-04	1.4E-06	1.64E-05	1.6E-05
Nickel	2.1E-03	4.2E-04	1.1E-05	1.64E-05	1.6E-05
Selenium	2.4E-05	2.1E-03	1.3E-07	8.21E-05	8.2E-05
Benzene	2.1E-03		1.1E-05		1.1E-05
Dichlorobenzene	1.2E-03		6.6E-06		6.6E-06
Ethylbenzene					0
Formaldehyde	7.5E-02	6.10E-02	4.1E-04	2.39E-03	2.4E-03
Hexane	1.8E+00		9.9E-03		9.9E-03
Phenol					0
Toluene	3.4E-03		1.9E-05		1.9E-05
Total PAH Haps	negl		negl		0
Polycyclic Organic Matter		3.30E-03		1.29E-04	1.3E-04
<b>Total HAPs =</b>			<b>1.0E-02</b>	<b>2.8E-03</b>	<b>0.013</b>
<b>Worst Single HAP =</b>			<b>9.9E-03</b>	<b>2.4E-03</b>	<b>9.9E-03</b>
			(Hexane)	(Formaldehyde)	(Hexane)

**Methodology**

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 MMCF/1,000 MMBtu]  
 Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.140 MMBtu]  
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] \* [Emission Factor (lb/MMCF)] \* [ton/2000 lbs]  
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] \* [Emission Factor (lb/kgal)] \* [kgal/1000 gal] \* [ton/2000 lbs]  
 Sources of AP-42 Emission Factors for fuel combustion:  
 Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4  
 No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

**Abbreviations**

PM = Particulate Matter  
 PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate Matter (<2.5 um)  
 SO2 = Sulfur Dioxide  
 NOx = Nitrous Oxides  
 VOC = Volatile Organic Compounds  
 CO = Carbon Monoxide  
 HAP = Hazardous Air Pollutant  
 HCl = Hydrogen Chloride  
 PAH = Polycyclic Aromatic Hydrocarbon



**Appendix A.1: Unlimited Emissions Calculations  
Reciprocating Internal Combustion Engines  
Gasoline-Fired Maintenance Welding Unit  
Output Rating (<=250 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	20.5
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	179,580
Maximum Gasoline Usage (gal/yr)	10,036

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal <sup>1</sup>	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Potential Emission in tons/yr	0.06	0.06	0.06	0.05	0.99	1.35	0.62

<sup>1</sup> The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup> Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 20,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup> PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Potential Emission in tons/yr	5.86E-04	2.57E-04	1.79E-04	2.46E-05	7.42E-04	4.82E-04	5.81E-05	1.06E-04

<sup>3</sup> PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup> The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup> Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<b>Potential Emission of Total HAPs (tons/yr)</b>	<b>2.43E-03</b>
<b>Potential Emission of Worst Case HAPs (tons/yr)</b>	<b>7.42E-04</b>

**Methodology**

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Maximum Hours Operated per Year]

Maximum Gasoline Usage (gal/yr) = Potential Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/20,300 (lb/Btu) \* 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Potential Emissions (tons/yr) = [Maximum Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

**Appendix A.1: Unlimited Emissions Calculations  
Reciprocating Internal Combustion Engines  
Gasoline-Fired Emergency Generator  
Output Rating (<=250 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	8.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	4,000
Maximum Gasoline Usage (gal/yr)	224

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal <sup>1</sup>	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Potential Emission in tons/yr	1.44E-03	1.44E-03	1.44E-03	1.18E-03	0.022	3.00E-02	1.39E-02

<sup>1</sup> The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup> Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 20,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup> PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Potential Emission in tons/yr	1.31E-05	5.73E-06	3.99E-06	5.47E-07	1.65E-05	1.07E-05	1.30E-06	2.35E-06

<sup>3</sup> PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup> The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup> Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<b>Potential Emission of Total HAPs (tons/yr)</b>	<b>5.42E-05</b>
<b>Potential Emission of Worst Case HAPs (tons/yr)</b>	<b>1.65E-05</b>

**Methodology**

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Maximum Hours Operated per Year]

Maximum Gasoline Usage (gal/yr) = Potential Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/20,300 (lb/Btu) \* 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Potential Emissions (tons/yr) = [Maximum Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

**Appendix A.1: Unlimited Emissions Calculations  
Reciprocating Internal Combustion Engines  
Diesel Fuel-Fired RAP Screening Unit (RC2)  
Output Rating (<=600 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	100.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	876,000
Maximum Diesel Fuel Usage (gal/yr)	44,749

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal <sup>1</sup>	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	0.96	0.96	0.96	0.90	13.58	1.10	2.93

<sup>1</sup>The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup>Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup>PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	2.86E-03	1.25E-03	8.74E-04	1.20E-04	3.62E-03	2.35E-03	2.84E-04	5.15E-04

<sup>3</sup>PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup>The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Potential Emission of Total HAPs (tons/yr)</b>	<b>0.012</b>
<b>Potential Emission of Worst Case HAPs (tons/yr)</b>	<b>3.62E-03</b>

**Methodology**

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/19300 (lb/Btu) \* 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

**Appendix A.1: Unlimited Emissions Calculations  
Reciprocating Internal Combustion Engines  
Diesel Fuel-Fired Crushing Unit (CR1) - Generator  
Output Rating (<=600 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	450.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	3,942,000
Maximum Diesel Fuel Usage (gal/yr)	201,372

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal <sup>1</sup>	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	4.34	4.34	4.34	4.04	61.10	4.96	13.17

<sup>1</sup>The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup>Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup>PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	0.013	5.64E-03	3.93E-03	5.39E-04	0.016	0.011	1.28E-03	2.32E-03

<sup>3</sup>PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup>The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Potential Emission of Total HAPs (tons/yr)</b>	<b>0.053</b>
<b>Potential Emission of Worst Case HAPs (tons/yr)</b>	<b>0.016</b>

**Methodology**

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/19300 (lb/Btu) \* 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

**Appendix A.1: Unlimited Emissions Calculations  
Reciprocating Internal Combustion Engines  
Large Diesel Fuel-Fired Unit  
Output Rating (>600 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	0.0	Sulfur Content (S) of Fuel (% by weight)	0.00
Maximum Hours Operated per Year	8760		
Potential Throughput (hp-hr/yr)	0		
Maximum Diesel Fuel Usage (gal/yr)	0		

	Pollutant						
	PM	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 (.00809S)	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal <sup>1</sup>	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>1</sup>The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup>Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup>Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>2</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

**Hazardous Air Pollutants (HAPs)**

	Pollutant						Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal <sup>4</sup>	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

<sup>3</sup>PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup>Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Potential Emission of Total HAPs (tons/yr)</b>	<b>0.00E+00</b>
<b>Potential Emission of Worst Case HAPs (tons/yr)</b>	<b>0.00E+00</b>

**Methodology**

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/19300 (lb/Btu) \* 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton )

**Appendix A.1: Unlimited Emissions Calculations  
Asphalt Load-Out, Silo Filling, and Yard Emissions**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	1,971,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.51	0.58	NA	1.09
Organic PM	3.4E-04	2.5E-04	NA	0.34	0.250	NA	0.59
TOC	0.004	0.012	0.001	4.10	12.01	1.084	17.2
CO	0.001	0.001	3.5E-04	1.33	1.163	0.347	2.84

NA = Not Applicable (no AP-42 Emission Factor)

<b>PM/HAPs</b>	<b>0.024</b>	<b>0.028</b>	<b>0</b>	<b>0.052</b>
<b>VOC/HAPs</b>	<b>0.061</b>	<b>0.153</b>	<b>0.016</b>	<b>0.229</b>
<b>non-VOC/HAPs</b>	<b>3.2E-04</b>	<b>3.2E-05</b>	<b>8.3E-05</b>	<b>4.3E-04</b>
<b>non-VOC/non-HAPs</b>	<b>0.30</b>	<b>0.17</b>	<b>0.08</b>	<b>0.55</b>

<b>Total VOCs</b>	<b>3.85</b>	<b>12.01</b>	<b>1.0</b>	<b>16.9</b>
<b>Total HAPs</b>	<b>0.08</b>	<b>0.18</b>	<b>0.016</b>	<b>0.28</b>
<b>Worst Single HAP</b>				<b>0.087</b>
				<b>(formaldehyde)</b>

**Methodology**

The asphalt temperature and volatility factor were provided by the source.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14):

Total PM/PM10/PM2.5 Ef =  $0.000181 + 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$   
 Organic PM Ef =  $0.00141(-V)e^{((0.0251)(T+460)-20.43)}$   
 TOC Ef =  $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$   
 CO Ef =  $0.00558(-V)e^{((0.0251)(T+460)-20.43)}$

Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):

PM/PM10 Ef =  $0.000332 + 0.00105(-V)e^{((0.0251)(T+460)-20.43)}$   
 Organic PM Ef =  $0.00105(-V)e^{((0.0251)(T+460)-20.43)}$   
 TOC Ef =  $0.0504(-V)e^{((0.0251)(T+460)-20.43)}$   
 CO Ef =  $0.00488(-V)e^{((0.0251)(T+460)-20.43)}$

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

\*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

**Abbreviations**

TOC = Total Organic Compounds	PM2.5 = Particulate Matter (<2.5 um)
CO = Carbon Monoxide	HAP = Hazardous Air Pollutant
PM = Particulate Matter	VOC = Volatile Organic Compound
PM10 = Particulate Matter (<10 um)	

**Appendix A.1: Unlimited Emissions Calculations  
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Organic Particulate-Based Compounds (Table 11.1-15)**

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)				
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total	
<b>PAH HAPs</b>											
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	8.7E-04	1.2E-03	NA	2.0E-03	
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	9.4E-05	3.5E-05	NA	1.3E-04	
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	2.4E-04	3.3E-04	NA	5.6E-04	
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	6.4E-05	1.4E-04	NA	2.0E-04	
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	2.6E-05	0	NA	2.6E-05	
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	7.4E-06	0	NA	7.4E-06	
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	6.4E-06	0	NA	6.4E-06	
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	7.7E-06	0	NA	7.7E-06	
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	2.6E-05	2.4E-05	NA	5.0E-05	
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	3.5E-04	5.3E-04	NA	8.7E-04	
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	1.2E-06	0	NA	1.2E-06	
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.7E-04		NA	1.7E-04	
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	2.6E-03	2.5E-03	NA	5.1E-03	
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	1.6E-06	0	NA	1.6E-06	
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	8.0E-03	1.3E-02	NA	0.021	
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	4.2E-03	4.6E-03	NA	8.8E-03	
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	7.4E-05	7.5E-05	NA	1.5E-04	
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	2.7E-03	4.5E-03	NA	7.2E-03	
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	5.0E-04	1.1E-03	NA	1.6E-03	
<b>Total PAH HAPs</b>							<b>0.020</b>	<b>0.028</b>	<b>NA</b>	<b>0.048</b>	
<b>Other semi-volatile HAPs</b>											
Phenol		PM/HAP	---	Organic PM	1.18%	0	4.0E-03	0	0	4.0E-03	

NA = Not Applicable (no AP-42 Emission Factor)

**Methodology**

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] \* [Organic PM (tons/yr)]

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter

**Appendix A.1: Unlimited Emissions Calculations  
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

**Organic Volatile-Based Compounds (Table 11.1-16)**

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
<b>VOC</b>		VOC	---	TOC	94%	100%	<b>3.85</b>	<b>12.01</b>	<b>1.02</b>	<b>16.88</b>
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	2.7E-01	3.1E-02	7.0E-02	0.368
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	1.9E-03	6.6E-03	5.0E-04	0.009
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	2.9E-02	1.3E-01	7.7E-03	0.169
<b>Total non-VOC/non-HAPS</b>					<b>7.30%</b>	<b>1.40%</b>	<b>0.299</b>	<b>0.168</b>	<b>0.079</b>	<b>0.55</b>
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	2.1E-03	3.8E-03	5.6E-04	6.5E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	3.9E-04	5.9E-04	1.0E-04	1.1E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	2.0E-03	4.7E-03	5.3E-04	7.2E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	5.3E-04	1.9E-03	1.4E-04	2.6E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	8.6E-06	4.8E-04	2.3E-06	4.9E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	6.1E-04	2.8E-03	1.6E-04	3.5E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	4.5E-03	0	1.2E-03	5.7E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	1.1E-02	4.6E-03	3.0E-03	0.019
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	3.6E-03	8.3E-02	9.5E-04	0.087
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	6.1E-03	1.2E-02	1.6E-03	0.020
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	7.4E-05	3.7E-05	2.0E-05	1.3E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	3.2E-05	0	3.2E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	3.0E-04	6.5E-04	7.9E-05	1.0E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	3.2E-04	0	8.3E-05	4.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	8.6E-03	7.4E-03	2.3E-03	0.018
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	5.3E-05	0	1.4E-05	6.7E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.7E-02	2.4E-02	4.4E-03	0.045
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	3.3E-03	6.8E-03	8.7E-04	0.011
<b>Total volatile organic HAPs</b>					<b>1.50%</b>	<b>1.30%</b>	<b>0.061</b>	<b>0.156</b>	<b>0.016</b>	<b>0.234</b>

**Methodology**

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] \* [TOC (tons/yr)]

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

TOC = Total Organic Compounds

VOC = Volatile Organic Compound

HAP = Hazardous Air Pollutant

MTBE = Methyl tert butyl ether

**Appendix A.1: Unlimited Emissions Calculations  
Material Storage Piles**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$E_f = 1.7 \cdot (s/1.5) \cdot (365-p) / 235 \cdot (f/15)$ <p>where <math>E_f</math> = emission factor (lb/acre/day)  <math>s</math> = silt content (wt %)  <math>p</math> = <input type="text" value="125"/> days of rain greater than or equal to 0.01 inches  <math>f</math> = <input type="text" value="15"/> % of wind greater than or equal to 12 mph</p>
---

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.75	0.412	0.144
Limestone	1.6	1.85	3.75	1.267	0.444
Concrete	1.6	1.85	2.00	0.676	0.237
RAP	0.5	0.58	3.75	0.396	0.139
Gravel	1.6	1.85	0.75	0.253	0.089
Slag	3.8	4.40	2.00	1.605	0.562
Shingles	0.5	0.58	0.62	0.065	0.023
<b>Totals</b>				<b>4.68</b>	<b>1.64</b>

**Methodology**

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) \* (Maximum Pile Size (acres)) \* (ton/2000 lbs) \* (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) \* 35%

\*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

According to Babcock Paving, Inc., the concrete is consistent with #53 Limestone.

\*\*Maximum anticipated pile size (acres) provided by the source. The pile size of the slag and shingles were provided in tons and have been converted to acres based on the assumption that the piles are at maximum 8.5 feet in height.

PM2.5 = PM10

**Abbreviations**

RAP - recycled asphalt pavement  
 PM = Particulate Matter

PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

### Appendix A.1: Unlimited Emissions Calculations Material Processing, Handling, Crushing, Screening, and Conveying

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

#### Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$Ef = k \cdot (0.0032)^{1.3} \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

where: Ef = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
Ef (PM) =	2.27E-03	lb PM/ton of material handled
Ef (PM10) =	1.07E-03	lb PM10/ton of material handled
Ef (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Maximum Annual Asphalt Production =	1,971,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,872,450	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	2.12	1.00	0.15
Front-end loader dumping of materials into feeder bins	2.12	1.00	0.15
Conveyor dropping material into dryer/mixer or batch tower	2.12	1.00	0.15
<b>Total (tons/yr)</b>	<b>6.37</b>	<b>3.01</b>	<b>0.46</b>

#### Methodology

The percent asphalt cement/binder provided by the source.

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]

Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)

Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives

\*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

#### Material Screening and Conveying (AP-42 Section 11.19.2)

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	5.06	2.25
Screening	0.025	0.0087	23.41	8.15
Conveying	0.003	0.0011	2.81	1.03
<b>Unlimited Potential to Emit (tons/yr) =</b>			<b>31.27</b>	<b>11.42</b>

#### Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]

Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] \* [Emission Factor (lb/ton)] \* [ton/2000 lbs]

Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

\*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2).

The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

\*\*Assumes PM10 = PM2.5

#### Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate matter (< 2.5 um)

PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations  
Material Processing, Handling, Crushing, Screening, and Conveying  
Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Batch or Continuous Drop Operations (AP-42 Section 13.2.4)**

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^U \cdot [(U/5)^{1.3} / (M/2)^{1.4}]$$

where:  $E_f$  = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
$E_f$ (PM) =	2.27E-03	lb PM/ton of material handled
$E_f$ (PM10) =	1.07E-03	lb PM10/ton of material handled
$E_f$ (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

  

Maximum Material Throughput =	145	tons/hr
=	1,270,200	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	1.44	0.68	0.10
Front-end loader dumping of materials into feeder bins	1.44	0.68	0.10
Conveyor dropping material into crusher	1.44	0.68	0.10
<b>Total (tons/yr)</b>	<b>4.32</b>	<b>2.04</b>	<b>0.31</b>

**Methodology**

The percent asphalt cement/binder provided by the source.

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]

Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)

Raw materials include recycled concrete.

\*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

**Material Screening and Conveying (AP-42 Section 11.19.2)**

To estimate potential fugitive dust emissions from raw material crushing, and the accompanying screening and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	3.43	1.52
Screening	0.025	0.0087	15.88	5.53
Conveying	0.003	0.0011	1.91	0.70
			<b>21.21</b>	<b>7.75</b>

**Methodology**

Maximum Material Throughput (tons/hr) = [Maximum Capacity of the Equipment]

Unlimited Potential to Emit (tons/yr) = [Maximum Material Throughput (tons/hr)] \* [Emission Factor (lb/ton)] \* [ton/2000 lbs] \* [8760 hrs/yr]

Raw materials include recycled concrete.

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

\*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

\*\*Assumes PM10 = PM2.5

**Abbreviations**

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate matter (< 2.5 um)

PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations  
Unpaved Roads associated with the Hot-Mix Asphalt Plant**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Unpaved Roads at Industrial Site**

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

Maximum Annual Asphalt Production = 1,971,000 tons/yr  
Percent Asphalt Cement/Binder (weight %) = 5.0%  
Maximum Material Handling Throughput = 1,872,450 tons/yr  
Maximum Asphalt Cement/Binder Throughput = 98,550 tons/yr  
Maximum No. 2 Fuel Oil Usage = 4,692,857 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	8.4E+04	3.3E+06	300	0.057	4749.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	8.4E+04	1.4E+06	300	0.057	4749.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	2.7E+03	1.3E+05	300	0.057	155.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.7E+03	3.3E+04	300	0.057	155.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	5.0E+02	2.2E+04	300	0.057	28.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	5.0E+02	5.9E+03	300	0.057	28.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	4.5E+05	8.6E+06	300	0.057	25330.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	4.5E+05	6.7E+06	300	0.057	25330.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	8.2E+04	3.4E+06	300	0.057	4666.2
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	8.2E+04	1.4E+06	300	0.057	4666.2
<b>Total</b>					<b>1.2E+06</b>	<b>2.5E+07</b>			<b>7.0E+04</b>

Average Vehicle Weight Per Trip = 20.3 tons/trip  
Average Miles Per Trip = 0.057 miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E \* [(365 - P)/365]

Mitigated Emission Factor, Eext = E \* [(365 - P)/365]  
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, Eext =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	14.47	3.69	0.37	9.52	2.43	0.24	4.76	1.21	0.12
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	14.47	3.69	0.37	9.52	2.43	0.24	4.76	1.21	0.12
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.474	0.121	0.01	0.312	0.079	0.01	0.156	0.040	0.00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.474	0.121	0.01	0.312	0.079	0.01	0.156	0.040	0.00
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.086	0.022	0.00	0.056	0.014	0.00	0.028	0.007	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.086	0.022	0.00	0.056	0.014	0.00	0.028	0.007	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	77.20	19.67	1.97	50.76	12.94	1.29	25.38	6.47	0.65
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	77.20	19.67	1.97	50.76	12.94	1.29	25.38	6.47	0.65
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	14.22	3.62	0.36	9.35	2.38	0.24	4.68	1.19	0.12
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	14.22	3.62	0.36	9.35	2.38	0.24	4.68	1.19	0.12
<b>Totals</b>		<b>212.90</b>	<b>54.26</b>	<b>5.43</b>	<b>139.99</b>	<b>35.68</b>	<b>3.57</b>	<b>69.99</b>	<b>17.84</b>	<b>1.78</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations  
Unpaved Roads associated with the Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Unpaved Roads at Industrial Site**

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

Maximum Material Handling Throughput =  $\frac{1,270,200}{246,121}$  tons/yr  
 Maximum Diesel Fuel Usage =  $\frac{1,270,200}{246,121}$  gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	5.7E+04	2.2E+06	300	0.057	3221.9
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	5.7E+04	9.6E+05	300	0.057	3221.9
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.6E+01	1.1E+03	300	0.057	1.5
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.6E+01	3.1E+02	300	0.057	1.5
Concrete/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	3.0E+05	5.8E+06	300	0.057	17183.4
Concrete/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	3.0E+05	4.5E+06	300	0.057	17183.4
Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	5.3E+04	2.2E+06	300	0.057	3007.1
Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	5.3E+04	9.0E+05	300	0.057	3007.1
<b>Total</b>					<b>8.2E+05</b>	<b>1.7E+07</b>			<b>4.7E+04</b>

Average Vehicle Weight Per Trip =  $\frac{20.2}{0.057}$  tons/trip  
 Average Miles Per Trip =  $\frac{20.2}{0.057}$  miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.2	20.2	20.2	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

Mitigated Emission Factor,  $E_{ext} = E \cdot [(365 - P)/365]$   
 where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f$ =	6.08	1.55	0.15	lb/mile
Mitigated Emission Factor, $E_{ext}$ =	4.00	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	9.79	2.50	0.25	6.44	1.64	0.16	3.22	0.82	0.08
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	9.79	2.50	0.25	6.44	1.64	0.16	3.22	0.82	0.08
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.004	0.001	0.00	0.003	0.001	0.00	0.001	0.000	0.00
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.004	0.001	0.00	0.003	0.001	0.00	0.001	0.000	0.00
Concrete/RAP Loader Full	Front-end loader (3 CY)	52.24	13.31	1.33	34.35	8.75	0.88	17.17	4.38	0.44
Concrete/RAP Loader Empty	Front-end loader (3 CY)	52.24	13.31	1.33	34.35	8.75	0.88	17.17	4.38	0.44
Concrete Truck Leave Full	Dump truck (16 CY)	9.14	2.33	0.23	6.01	1.53	0.15	3.01	0.77	0.08
Concrete Truck Enter Empty	Dump truck (16 CY)	9.14	2.33	0.23	6.01	1.53	0.15	3.01	0.77	0.08
<b>Totals</b>		<b>142.36</b>	<b>36.28</b>	<b>3.63</b>	<b>93.61</b>	<b>23.86</b>	<b>2.39</b>	<b>46.80</b>	<b>11.93</b>	<b>1.19</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations**  
**Paved Roads associated with the Hot-Mix Asphalt Plant**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Paved Roads at Industrial Site**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Maximum Annual Asphalt Production = 1,971,000 tons/yr  
 Percent Asphalt Cement/Binder (weight %) = 5.0%  
 Maximum Material Handling Throughput = 1,872,450 tons/yr  
 Maximum Asphalt Cement/Binder Throughput = 98,550 tons/yr  
 Maximum No. 2 Fuel Oil Usage = 4,692,857 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	8.4E+04	3.3E+06	300	0.057	4749.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	8.4E+04	1.4E+06	300	0.057	4749.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	2.7E+03	1.3E+05	300	0.057	155.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.7E+03	3.3E+04	300	0.057	155.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	5.0E+02	2.2E+04	300	0.057	28.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	5.0E+02	5.9E+03	300	0.057	28.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	4.5E+05	8.6E+06	300	0.057	25330.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	4.5E+05	6.7E+06	300	0.057	25330.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	8.2E+04	3.4E+06	300	0.057	4666.2
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	8.2E+04	1.4E+06	300	0.057	4666.2
<b>Total</b>					<b>1.2E+06</b>	<b>2.5E+07</b>			<b>7.0E+04</b>

Average Vehicle Weight Per Trip = 20.3 tons/trip  
 Average Miles Per Trip = 0.057 miles/trip

Unmitigated Emission Factor, Ef = [k \* (sL)<sup>0.91</sup> \* (W)<sup>1.02</sup>] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	lb/mi
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m <sup>2</sup> = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E \* [1 - (p/4N)]

Mitigated Emission Factor, Eext = Ef \* [1 - (p/4N)]  
 where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
 N = 365 days per year

	PM	PM10	PM2.5	lb/mile
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.012	0.002	5.7E-04	0.011	0.002	5.2E-04	0.005	1.1E-03	2.6E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.012	0.002	5.7E-04	0.011	0.002	5.2E-04	0.005	1.1E-03	2.6E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	2.1E-03	4.2E-04	1.0E-04	1.9E-03	3.8E-04	9.4E-05	9.6E-04	1.9E-04	4.7E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	2.1E-03	4.2E-04	1.0E-04	1.9E-03	3.8E-04	9.4E-05	9.6E-04	1.9E-04	4.7E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	1.88	0.38	0.09	1.72	0.34	0.08	0.86	0.17	0.04
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	1.88	0.38	0.09	1.72	0.34	0.08	0.86	0.17	0.04
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
<b>Totals</b>		<b>5.20</b>	<b>1.04</b>	<b>0.26</b>	<b>4.75</b>	<b>0.95</b>	<b>0.23</b>	<b>2.38</b>	<b>0.48</b>	<b>0.12</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations  
Paved Roads associated with the Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Paved Roads at Industrial Site**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Maximum Material Handling Throughput =  tons/yr  
Maximum Diesel Fuel Usage =  gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	5.7E+04	2.2E+06	300	0.057	3221.9
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	5.7E+04	9.6E+05	300	0.057	3221.9
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.6E+01	1.1E+03	300	0.057	1.5
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.6E+01	3.1E+02	300	0.057	1.5
Concrete/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	3.0E+05	5.8E+06	300	0.057	17183.4
Concrete/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	3.0E+05	4.5E+06	300	0.057	17183.4
Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	5.3E+04	2.2E+06	300	0.057	3007.1
Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	5.3E+04	9.0E+05	300	0.057	3007.1
<b>Total</b>					<b>8.2E+05</b>	<b>1.7E+07</b>			<b>4.7E+04</b>

Average Vehicle Weight Per Trip =  tons/trip  
Average Miles Per Trip =  miles/trip

Unmitigated Emission Factor, Ef = [k \* (sL)<sup>0.91</sup> \* (W)<sup>1.02</sup>] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.2	20.2	20.2	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m <sup>2</sup> = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E \* [1 - (p/4N)]

Mitigated Emission Factor, Eext =  $E_f * [1 - (p/4N)]$   
where p =  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
N =  days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	0.24	0.05	0.01	0.22	0.04	0.01	0.11	0.02	0.01
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	0.24	0.05	0.01	0.22	0.04	0.01	0.11	0.02	0.01
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.1E-04	2.2E-05	5.4E-06	1.0E-04	2.0E-05	4.9E-06	5.0E-05	1.0E-05	2.5E-06
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.1E-04	2.2E-05	5.4E-06	1.0E-04	2.0E-05	4.9E-06	5.0E-05	1.0E-05	2.5E-06
Concrete/RAP Loader Full	Front-end loader (3 CY)	1.27	0.25	0.06	1.16	0.23	0.06	0.58	0.12	0.03
Concrete/RAP Loader Empty	Front-end loader (3 CY)	1.27	0.25	0.06	1.16	0.23	0.06	0.58	0.12	0.03
Concrete Truck Leave Full	Dump truck (16 CY)	0.22	0.04	0.01	0.20	0.04	0.01	0.10	0.02	0.00
Concrete Truck Enter Empty	Dump truck (16 CY)	0.22	0.04	0.01	0.20	0.04	0.01	0.10	0.02	0.00
<b>Totals</b>		<b>3.46</b>	<b>0.69</b>	<b>0.17</b>	<b>3.17</b>	<b>0.63</b>	<b>0.16</b>	<b>1.58</b>	<b>0.32</b>	<b>0.08</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations  
Cold Mix Asphalt Production and Stockpiles**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Maximum Annual Asphalt Production = 1,971,000 tons/yr  
Percent Asphalt Cement/Binder (weight %) = 5.0%  
Maximum Asphalt Cement/Binder Throughput = 98,550 tons/yr

**Volatile Organic Compounds**

	Maximum weight % of VOC solvent in binder*	Weight % VOC solvent in binder that evaporates	Maximum VOC Solvent Usage (tons/yr)	PTE of VOC (tons/yr)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	24,933.2	23,686.5
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	28,185.3	19,729.7
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	19,710.0	4,927.5
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	14,782.5	6,859.1
Other asphalt with solvent binder	25.9%	2.5%	25,524.5	638.1
<b>Worst Case PTE of VOC =</b>				<b>23,686.5</b>

**Hazardous Air Pollutants**

Worst Case Total HAP Content of VOC solvent (weight %) =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %) =	9.0% Xylenes
<b>PTE of Total HAPs (tons/yr) =</b>	<b>6,178.31</b>
<b>PTE of Single HAP (tons/yr) =</b>	<b>2,131.78 Xylenes</b>

**Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents\***

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
<b>Total Organic HAPs</b>		<b>26.08%</b>	<b>0.33%</b>	<b>1.29%</b>	<b>0.68%</b>	<b>0.19%</b>
<b>Worst Single HAP</b>		<b>9.00%</b> <b>Xylenes</b>	<b>0.31%</b> <b>Naphthalene</b>	<b>0.50%</b> <b>Xylenes</b>	<b>0.23%</b> <b>Xylenes</b>	<b>0.07%</b> <b>Chrysene</b>

**Methodology**

Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] \* [Maximum Weight % of VOC Solvent in Binder]  
PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] \* [Maximum VOC Solvent Usage (tons/yr)]  
PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] \* [Worst Case Limited PTE of VOC (tons/yr)]  
PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] \* [Worst Case Limited PTE of VOC (tons/yr)]

\*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

**Abbreviations**

VOC = Volatile Organic Compounds  
PTE = Potential to Emit

### Appendix A.1: Unlimited Emissions Calculations Gasoline Fuel Transfer and Dispensing Operation

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used. The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= \boxed{0} \text{ gallons/day} \\ &= \boxed{0.0} \text{ kgal/yr} \end{aligned}$$

#### Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
<b>Total</b>		<b>0.00</b>

#### Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
<b>Limited PTE of Total HAPs (tons/yr) =</b>	<b>0.00</b>
<b>Limited PTE of Single HAP (tons/yr) =</b>	<b>0.00 Xylenes</b>

#### Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] \* [365 days/yr] \* [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] \* [Emission Factor (lb/kgal)] \* [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

\*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

#### Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Entire Source - Drum Mix**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Asphalt Plant Limitations - Drum Mix**

Maximum Hourly Asphalt Production =	225	ton/hr								
Annual Asphalt Production Limitation =	850,000	ton/yr								
Blast Furnace Slag Usage Limitation =	50,000	ton/yr	1.50	% sulfur						
Steel Slag Usage Limitation =	850,000		0.66	% sulfur						
Crushing Unit (CR1) Material Throughput Limitation =	500,000									
Maximum Dryer Fuel Input Rate =	75.0	MMBtu/hr								
Natural Gas Limitation =	657	MMCF/yr								
No. 2 Fuel Oil Limitation =	1,987,496	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	1,881,497	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0	% sulfur						
Propane Limitation =	0	gal/yr, and	0	qr/100 ft3 sulfur						
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Used/Waste Oil Limitation =	1,279,930	gal/yr, and	0.75	% sulfur	0.947	% ash	0.200	% chlorine,	0.0089	% lead
Gasoline Limitation - Generator < 250 HP =	10,260	gal/yr, and								
Diesel Fuel Limitation - Generator < 600 HP =	200,000	gal/yr, and								
Diesel Fuel Limitation - Generator > 600 HP =	0	gal/yr	0	% sulfur						
PM Dryer/Mixer Limitation =	0.380	lb/ton of asphalt production								
PM10 Dryer/Mixer Limitation =	0.160	lb/ton of asphalt production								
PM2.5 Dryer/Mixer Limitation =	0.179	lb/ton of asphalt production								
SO2 Dryer/Mixer Limitation =	0.058	lb/ton of asphalt production								
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production								
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production								
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production								
Blast Furnace Slag SO2 Dryer/Mixer Limitation =	0.740	lb/ton of slag processed								
Steel Slag SO2 Dryer/Mixer Limitation =	0.0014	lb/ton of slag processed								
Cold Mix Asphalt VOC Limitation =	52.50	tons/yr								
HCl Limitation =	13.20	lb/kgal								
PM Crusher Limitation =	0.0054	lb/ton of material processed								
PM10 Crusher Limitation =	0.0024	lb/ton of material processed								
PM2.5 Crusher Limitation =	0.0024	lb/ton of material processed								

**Limited/Controlled Emissions**

Process Description	Limited/Controlled Potential Emissions (tons/year)									
	Criteria Pollutants							Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP	
<b>Ducted Emissions</b>										
Dryer Fuel Combustion (worst case)	38.79	30.91	30.91	70.56	32.85	1.81	27.59	9.68	8.45	(hydrogen chloride)
Dryer/Mixer (Process)	161.50	68.00	76.08	24.65	23.38	13.60	55.25	4.53	1.32	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	18.50	0	0	0	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	0.013	9.86E-03	(hexane)
Gasoline-Fired Generator < 250 HP (Maint. Welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	2.43E-03	7.42E-04	(formaldehyde)
Gasoline-Fired Generator < 250 HP (Emergency Gen.)	1.44E-03	1.44E-03	1.44E-03	1.18E-03	0.02	0.03	0.01	5.42E-05	1.65E-05	(formaldehyde)
Diesel-Fired Generator < 600 HP	4.31	4.31	4.31	4.01	60.68	4.92	13.08	0.053	0.016	(formaldehyde)
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	NA	
<b>Worst Case Emissions*</b>	<b>165.95</b>	<b>72.50</b>	<b>80.58</b>	<b>95.90</b>	<b>95.33</b>	<b>19.93</b>	<b>69.43</b>	<b>9.75</b>	<b>8.45</b>	(hydrogen chloride)

combined limit

**Fugitive Emissions**

Asphalt Load-Out, Silo Filling, On-Site Yard	0.47	0.47	0.47	0	0	7.28	1.22	0.12	0.04	(formaldehyde)
Material Storage Piles	4.68	1.64	1.64	0	0	0	0	0	0	
Material Processing and Handling	4.45	2.10	0.32	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	21.84	7.98	7.98	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	48.61	12.39	1.24	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	52.50	0	13.69	4.73	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	negl	
<b>Total Fugitive Emissions</b>	<b>80.04</b>	<b>24.57</b>	<b>11.64</b>	<b>0</b>	<b>0</b>	<b>59.78</b>	<b>1.22</b>	<b>13.82</b>	<b>4.73</b>	(xylenes)
<b>Totals Limited/Controlled Emissions</b>	<b>245.99</b>	<b>97.08</b>	<b>92.22</b>	<b>95.90</b>	<b>95.33</b>	<b>79.71</b>	<b>70.65</b>	<b>23.56</b>	<b>8.45</b>	(hydrogen chloride)

negl = negligible

NA = not applicable

Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.

\*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP

Fuel component percentages provided by the source.

**Appendix A.2: Limited Emissions Summary**  
**Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

**Fuel Limitations**

Maximum Fuel Input Rate =	75.0	MMBtu/hr
Natural Gas Limitation =	657	MMCF/yr
No. 2 Fuel Oil Limitation =	1,987,496	gal/yr, and
No. 4 Fuel Oil Limitation =	1,881,497	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and
Propane Limitation =	0	gal/yr, and
Butane Limitation =	0	gal/yr, and
Used/Waste Oil Limitation =	1,279,930	gal/yr, and
		0.50 % sulfur
		0.50 % sulfur
		0 % sulfur
		0 gr/100 ft3 sulfur
		0 gr/100 ft3 sulfur
		0.75 % sulfur
	0.947	% ash
	0.200	% chlorine
	0.0089	% lead

**Limited Emissions**

Criteria Pollutant	Emission Factor (units)							Limited Potential to Emit (tons/yr)							
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)
PM	1.9	2.0	7.0	3.22	0.5	0.6	60.6	0.62	1.99	6.59	0.00	0.000	0.000	38.79	38.79
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	48.297	2.50	3.28	7.81	0.00	0.000	0.000	30.91	30.91
SO2	0.6	71.0	75.0	0.0	0.00	0.00	110.3	0.20	70.56	70.56	0.00	0.000	0.000	70.56	70.56
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	32.85	19.87	18.81	0.00	0.00	0.00	12.16	32.85
VOC	5.5	0.20	0.20	0.28	1.0	1.10	1.0	1.81	0.20	0.19	0.00	0.00	0.00	0.64	1.81
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	27.59	4.97	4.70	0.00	0.00	0.00	3.20	27.59
<b>Hazardous Air Pollutant</b>															
HCl							13.2							8.45	8.45
Antimony			5.25E-03	5.25E-03			negl			4.94E-03	0.00E+00			negl	4.9E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	6.6E-05	5.56E-04	1.24E-03	0.00E+00			7.04E-02	7.0E-02
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	3.9E-06	4.17E-04	2.62E-05	0.00E+00			negl	4.2E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	3.6E-04	4.17E-04	3.74E-04	0.00E+00			5.95E-03	6.0E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	4.6E-04	4.17E-04	7.95E-04	0.00E+00			1.28E-02	1.3E-02
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	2.8E-05		5.66E-03	0.00E+00			1.34E-04	5.7E-03
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.4895	1.6E-04	1.25E-03	1.42E-03	0.00E+00			3.1E-01	0.31
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.2E-04	8.35E-04	2.82E-03	0.00E+00			4.35E-02	0.04
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				8.5E-05	4.17E-04	1.06E-04	0.00E+00				4.2E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	6.9E-04	4.17E-04	7.95E-02	0.00E+00			7.04E-03	0.079
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	7.9E-06	2.09E-03	6.43E-04	0.00E+00			negl	2.1E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04						2.22E-04	0.00E+00				2.2E-04
1,3-Butadiene															0.0E+00
Acetaldehyde															0.0E+00
Acrolein															0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				6.9E-04		2.01E-04	0.00E+00				6.9E-04
Bis(2-ethylhexyl)phthalate							2.2E-03							1.41E-03	1.4E-03
Dichlorobenzene	1.2E-03						8.0E-07	3.9E-04						5.12E-07	3.9E-04
Ethylbenzene			6.36E-05	6.36E-05						5.98E-05	0.00E+00				6.0E-05
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				2.5E-02	6.06E-02	3.10E-02	0.00E+00				0.061
Hexane	1.8E+00							0.59							0.591
Phenol							2.4E-03							1.54E-03	1.5E-03
Toluene	3.4E-03		6.20E-03	6.20E-03				1.1E-03		5.83E-03	0.00E+00				5.8E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		1.06E-03	0.00E+00			2.50E-02	2.5E-02
Polycyclic Organic Matter		3.30E-03							3.28E-03						3.3E-03
Xylene			1.09E-04	1.09E-04						1.03E-04	0.00E+00				1.0E-04
<b>Total HAPs</b>							<b>0.62</b>	<b>0.07</b>	<b>0.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>8.93</b>	<b>9.68</b>

**Methodology**

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) \* (Emission Factor (lb/MMCF)) \* (ton/2000 lbs)  
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) \* (Emission Factor (lb/kgal)) \* (kgal/1000 gal) \* (ton/2000 lbs)  
 Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
- Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

**Abbreviations**

- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (< 2.5 um)
- SO2 = Sulfur Dioxide
- NOx = Nitrous Oxides
- VOC = Volatile Organic Compounds
- CO = Carbon Monoxide
- HAP = Hazardous Air Pollutant
- HCl = Hydrogen Chloride
- PAH = Polyaromatic Hydrocarbon

\*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

**Appendix A.2: Limited Emissions Summary  
Dryer/Mixer - Process Emissions**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the limited emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =	225	ton/hr
Annual Asphalt Production Limitation =	850,000	ton/yr
PM Dryer/Mixer Limitation =	0.380	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.160	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.179	lb/ton of asphalt production
SO2 Dryer/Mixer Limitation =	0.058	lb/ton of asphalt production
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.380	0.380	0.380	161.5	161.5	161.5	161.5
PM10*	0.160	0.160	0.160	68.0	68.0	68.0	68.0
PM2.5*	0.179	0.179	0.179	76.1	76.1	76.1	76.1
SO2**	0.003	0.011	0.058	1.4	4.7	24.7	24.7
NOx**	0.026	0.055	0.055	11.1	23.4	23.4	23.4
VOC**	0.032	0.032	0.032	13.6	13.6	13.6	13.6
CO***	0.130	0.130	0.130	55.3	55.3	55.3	55.3
<b>Hazardous Air Pollutant</b>							
HCl			2.10E-04			0.09	0.09
Antimony	1.80E-07	1.80E-07	1.80E-07	7.65E-05	7.65E-05	7.65E-05	7.65E-05
Arsenic	5.60E-07	5.60E-07	5.60E-07	2.38E-04	2.38E-04	2.38E-04	2.38E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	1.74E-04	1.74E-04	1.74E-04	1.74E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	2.34E-03	2.34E-03	2.34E-03	2.34E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.11E-05	1.11E-05	1.11E-05	1.11E-05
Lead	6.20E-07	1.50E-05	1.50E-05	2.64E-04	6.38E-03	6.38E-03	6.38E-03
Manganese	7.70E-06	7.70E-06	7.70E-06	3.27E-03	3.27E-03	3.27E-03	3.27E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.02E-04	1.11E-03	1.11E-03	1.11E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	2.68E-02	2.68E-02	2.68E-02	2.68E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	1.49E-04	1.49E-04	1.49E-04	1.49E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	1.70E-02	1.70E-02	1.70E-02	0.02
Acetaldehyde			1.30E-03			0.55	0.55
Acrolein			2.60E-05			1.11E-02	1.11E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.17	0.17	0.17	0.17
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.10	0.10	0.10	0.10
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	1.32	1.32	1.32	1.32
Hexane	9.20E-04	9.20E-04	9.20E-04	0.39	0.39	0.39	0.39
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.02	0.02	0.02	0.02
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.06	0.06
Quinone			1.60E-04			0.07	0.07
Toluene	1.50E-04	2.90E-03	2.90E-03	0.06	1.23	1.23	1.23
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.08	0.37	0.37	0.37
Xylene	2.00E-04	2.00E-04	2.00E-04	0.09	0.09	0.09	0.09
<b>Total HAPs</b>							<b>4.53</b>
<b>Worst Single HAP</b>							<b>1.3175 (formaldehyde)</b>

**Methodology**

Limited/Controlled Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

\* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

\*\* SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

\*\*\* CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

**Abbreviations**

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (< 2.5 um)

SO2 = Sulfur Dioxide

NOx = Nitrous Oxides

VOC - Volatile Organic Compounds

CO = Carbon Monoxide

HAP = Hazardous Air Pollutant

HCl = Hydrogen Chloride

PAH = Polyaromatic Hydrocarbon

**Appendix A.2: Limited Emissions Summary  
Dryer/Mixer Slag Processing**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the limited emissions from the processing of slag in the aggregate drying/mixing

Limited Blast Furnace Slag Usage = 

50,000
--------

 ton/yr 

1.50
------

 % sulfur  
 Limited Annual Steel Slag Usage = 

850,000
---------

 ton/yr 

0.66
------

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.7400	18.50
Steel Slag**	0.0014	0.60

**Methodology**

\* Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

\*\* Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Limited Potential to Emit SO2 from Slag (tons/yr) = [(Limited Slag Usage (ton/yr)) \* [Emission Factor (lb/ton)] \* [ton/2000 lbs]

**Abbreviations**

SO2 = Sulfur Dioxide

**Appendix A.2: Limited Emissions Summary**  
**Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**  
**Hot Oil Heater**

**Company Name:** Babcock Paving, Inc.  
**Source Location:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 1.25 MMBtu/hr  
 Natural Gas Usage = 11 MMCF/yr  
 No. 2 Fuel Oil Usage = 78,214 gal/yr, and 0.50 % sulfur

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.010	0.078	0.08
PM10/PM2.5	7.6	3.3	0.042	0.129	0.13
SO2	0.6	71.0	0.003	2.777	2.78
NOx	100	20.0	0.548	0.782	0.78
VOC	5.5	0.20	0.030	0.008	0.03
CO	84	5.0	0.460	0.196	0.46
<b>Hazardous Air Pollutant</b>					
Arsenic	2.0E-04	5.6E-04	1.1E-06	2.19E-05	2.2E-05
Beryllium	1.2E-05	4.2E-04	6.6E-08	1.64E-05	1.6E-05
Cadmium	1.1E-03	4.2E-04	6.0E-06	1.64E-05	1.6E-05
Chromium	1.4E-03	4.2E-04	7.7E-06	1.64E-05	1.6E-05
Cobalt	8.4E-05		4.6E-07		4.6E-07
Lead	5.0E-04	1.3E-03	2.7E-06	4.93E-05	4.9E-05
Manganese	3.8E-04	8.4E-04	2.1E-06	3.29E-05	3.3E-05
Mercury	2.6E-04	4.2E-04	1.4E-06	1.64E-05	1.6E-05
Nickel	2.1E-03	4.2E-04	1.1E-05	1.64E-05	1.6E-05
Selenium	2.4E-05	2.1E-03	1.3E-07	8.21E-05	8.2E-05
Benzene	2.1E-03		1.1E-05		1.1E-05
Dichlorobenzene	1.2E-03		6.6E-06		6.6E-06
Ethylbenzene					0
Formaldehyde	7.5E-02	6.10E-02	4.1E-04	2.39E-03	0.002
Hexane	1.8E+00		0.01		0.010
Phenol					0
Toluene	3.4E-03		1.9E-05		1.9E-05
Total PAH Haps	negl		negl		0
Polycyclic Organic Matter		3.30E-03		1.29E-04	1.3E-04

**Total HAPs = 1.0E-02 2.8E-03 0.013**  
**Worst Single HAP = 9.9E-03 2.4E-03 9.9E-03**  
**(Hexane) (Formaldehyde) (Hexane)**

**Methodology**

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.140 MMBtu]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] \* [Emission Factor (lb/MMCF)] \* [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] \* [Emission Factor (lb/kgal)] \* [kgal/1000 gal] \* [ton/2000 lbs]

Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4

No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

**Abbreviations**

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

SO2 = Sulfur Dioxide

NOx = Nitrous Oxides

VOC = Volatile Organic Compounds

CO = Carbon Monoxide

HAP = Hazardous Air Pollutant

HCl = Hydrogen Chloride

PAH = Polyaromatic Hydrocarbon

**Appendix A.2: Limited Emissions Summary  
Hot Oil Heating System - Process Emissions**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater = 1.25 MMBtu/hr  
 Natural Gas Usage = 11 MMCF/yr, and  
 No. 2 Fuel Oil Usage = 78,214 gal/yr

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	1.42E-04	1.04E-03	1.04E-03
CO	8.90E-06	0.0012	0.049	0.047	0.049
<b>Hazardous Air Pollutant</b>					
Formaldehyde	2.60E-08	3.50E-06	1.42E-04	1.37E-04	1.42E-04
Acenaphthene		5.30E-07		2.07E-05	2.07E-05
Acenaphthylene		2.00E-07		7.82E-06	7.82E-06
Anthracene		1.80E-07		7.04E-06	7.04E-06
Benzo(b)fluoranthene		1.00E-07		3.91E-06	3.91E-06
Fluoranthene		4.40E-08		1.72E-06	1.72E-06
Fluorene		3.20E-08		1.25E-06	1.25E-06
Naphthalene		1.70E-05		6.65E-04	6.65E-04
Phenanthrene		4.90E-06		1.92E-04	1.92E-04
Pyrene		3.20E-08		1.25E-06	1.25E-06
				<b>Total HAPs</b>	<b>1.04E-03</b>
				<b>Worst Single HAP</b>	<b>6.65E-04 (Naphthalene)</b>

**Methodology**

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 MMCF/1,000 MMBtu]  
 No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.140 MMBtu]  
 Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))\*(Emission Factor (lb/CF))\*(1000000 CF/MMCF)\*(ton/2000 lbs)  
 No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))\*(Emission Factor (lb/gal))\*(ton/2000 lbs)  
 Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)  
 1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu  
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

\*Note: There are no emission factors for CH4 and N2O available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

**Abbreviations**

CO = Carbon Monoxide                      VOC = Volatile Organic Compound                      CO2 = Carbon Dioxide

**Appendix A.2: Limited Emissions Summary  
Reciprocating Internal Combustion Engines  
Gasoline-Fired Maintenance Welding Unit  
Output Rating (<=250 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	20.5
Limited Hours Operated per Year	8760
Limited Throughput (hp-hr/yr)	179,580
Limited Gasoline Usage (gal/yr)	10,036

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal <sup>1</sup>	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Limited Emission in tons/yr	0.06	0.06	0.06	0.05	0.99	1.35	0.62

<sup>1</sup> The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup> Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 20,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup> PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Limited Emission in tons/yr	5.86E-04	2.57E-04	1.79E-04	2.46E-05	7.42E-04	4.82E-04	5.81E-05	1.06E-04

<sup>3</sup> PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup> The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup> Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 20,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<b>Limited Emission of Total HAPs (tons/yr)</b>	<b>2.43E-03</b>
<b>Limited Emission of Worst Case HAPs (tons/yr)</b>	<b>7.42E-04</b>

**Methodology**

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Limited Hours Operated per Year]

Limited Gasoline Usage (gal/yr) = Limited Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/20,300 (lb/Btu) \* 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Limited Emissions (tons/yr) = [Limited Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

**Appendix A.2: Limited Emissions Summary  
Reciprocating Internal Combustion Engines  
Gasoline-Fired Emergency Generator  
Output Rating (<=250 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	8.0
Limited Hours Operated per Year	500
Limited Throughput (hp-hr/yr)	4,000
Limited Gasoline Usage (gal/yr)	224

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal <sup>1</sup>	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Limited Emission in tons/yr	1.44E-03	1.44E-03	1.44E-03	1.18E-03	0.02	0.03	0.01

<sup>1</sup> The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup> Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 20,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup> PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Limited Emission in tons/yr	1.31E-05	5.73E-06	3.99E-06	5.47E-07	1.65E-05	1.07E-05	1.30E-06	2.35E-06

<sup>3</sup> PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup> The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup> Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 20,300 (Btu/lb) \* 6.17 (lb/gal) \* 1,000 (gal/kgal)

<b>Limited Emission of Total HAPs (tons/yr)</b>	<b>5.42E-05</b>
<b>Limited Emission of Worst Case HAPs (tons/yr)</b>	<b>1.65E-05</b>

**Methodology**

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Limited Hours Operated per Year]

Limited Gasoline Usage (gal/yr) = Limited Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/20,300 (lb/Btu) \* 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Limited Emissions (tons/yr) = [Limited Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

**Appendix A.2: Limited Emissions Summary  
Reciprocating Internal Combustion Engines  
Diesel Fuel-Fired RAP Screening Unit (RC2) and  
Diesel Fuel-Fired Crushing Unit (CR1) - Generator  
Output Rating (<=600 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Limited Diesel Fuel Usage (gal/yr)

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal <sup>1</sup>	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Limited Emission in tons/yr	4.31	4.31	4.31	4.01	60.68	4.92	13.08

<sup>1</sup> The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup>Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup>PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							Total PAH HAPs <sup>3</sup>
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Limited Emission in tons/yr	0.013	5.60E-03	3.91E-03	5.36E-04	0.016	0.011	1.27E-03	2.30E-03

<sup>3</sup>PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup>The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Limited Emission of Total HAPs (tons/yr)</b>	<b>0.053</b>
<b>Limited Emission of Worst Case HAPs (tons/yr)</b>	<b>0.016</b>

**Methodology**

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/19300 (lb/Btu) \* 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

**Appendix A.2: Limited Emissions Summary  
Reciprocating Internal Combustion Engines  
Large Diesel Fuel-Fired Unit(s)  
Output Rating (>600 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	0
Limited Hours Operated per Year	0
Limited Throughput (hp-hr/yr)	0
Limited Diesel Fuel Usage (gal/yr)	0

Sulfur Content (S) of Fuel (% by weight) 0.00

	Pollutant						
	PM	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 (.00809S)	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal <sup>1</sup>	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>1</sup> The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>1</sup>Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<sup>2</sup>Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>2</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

**Hazardous Air Pollutants (HAPs)**

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs <sup>3</sup>
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal <sup>4</sup>	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Limited Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

<sup>3</sup>PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup>Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Limited Emission of Total HAPs (tons/yr)</b>	<b>0.00E+00</b>
<b>Limited Emission of Worst Case HAPs (tons/yr)</b>	<b>0.00E+00</b>

**Methodology**

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/19300 (lb/Btu) \* 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

**Appendix A.2: Limited Emissions Summary  
Asphalt Load-Out, Silo Filling, and Yard Emissions**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the limited fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.50	
Annual Asphalt Production Limitation =	850,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.22	0.25	NA	0.47
Organic PM	3.4E-04	2.5E-04	NA	0.14	0.108	NA	0.25
TOC	0.004	0.012	0.001	1.77	5.18	0.468	7.4
CO	0.001	0.001	3.5E-04	0.57	0.501	0.150	1.22

NA = Not Applicable (no AP-42 Emission Factor)

<b>PM/HAPs</b>	<b>0.010</b>	<b>0.012</b>	<b>0</b>	<b>0.023</b>
<b>VOC/HAPs</b>	<b>0.026</b>	<b>0.066</b>	<b>0.007</b>	<b>0.099</b>
<b>non-VOC/HAPs</b>	<b>1.4E-04</b>	<b>1.4E-05</b>	<b>3.6E-05</b>	<b>1.9E-04</b>
<b>non-VOC/non-HAPs</b>	<b>0.13</b>	<b>0.07</b>	<b>0.03</b>	<b>0.24</b>

<b>Total VOCs</b>	<b>1.66</b>	<b>5.18</b>	<b>0.4</b>	<b>7.3</b>
<b>Total HAPs</b>	<b>0.04</b>	<b>0.08</b>	<b>0.007</b>	<b>0.12</b>
	<b>Worst Single HAP</b>			<b>0.038</b>
				<b>(formaldehyde)</b>

**Methodology**

The asphalt temperature and volatility factor were provided by the source.

Limited Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)  
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14)::

$$\begin{aligned} \text{Total PM/PM10 Ef} &= 0.000181 + 0.00141(-V)e^{\lambda((0.0251)(T+460)-20.43)} \\ \text{Organic PM Ef} &= 0.00141(-V)e^{\lambda((0.0251)(T+460)-20.43)} \\ \text{TOC Ef} &= 0.0172(-V)e^{\lambda((0.0251)(T+460)-20.43)} \\ \text{CO Ef} &= 0.00558(-V)e^{\lambda((0.0251)(T+460)-20.43)} \end{aligned}$$

Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):

$$\begin{aligned} \text{PM/PM10 Ef} &= 0.000332 + 0.00105(-V)e^{\lambda((0.0251)(T+460)-20.43)} \\ \text{Organic PM Ef} &= 0.00105(-V)e^{\lambda((0.0251)(T+460)-20.43)} \\ \text{TOC Ef} &= 0.0504(-V)e^{\lambda((0.0251)(T+460)-20.43)} \\ \text{CO Ef} &= 0.00488(-V)e^{\lambda((0.0251)(T+460)-20.43)} \end{aligned}$$

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

\*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

**Abbreviations**

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

**Appendix A.2: Limited Emissions Summary  
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Organic Particulate-Based Compounds (Table 11.1-15)**

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
<b>PAH HAPs</b>										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	3.8E-04	5.1E-04	NA	8.8E-04
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	4.1E-05	1.5E-05	NA	5.6E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.0E-04	1.4E-04	NA	2.4E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	2.8E-05	6.0E-05	NA	8.8E-05
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.1E-05	0	NA	1.1E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	3.2E-06	0	NA	3.2E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	2.8E-06	0	NA	2.8E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	3.3E-06	0	NA	3.3E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	1.1E-05	1.0E-05	NA	2.2E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	1.5E-04	2.3E-04	NA	3.8E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	5.4E-07	0	NA	5.4E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	7.2E-05	1.6E-04	NA	2.3E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.1E-03	1.1E-03	NA	2.2E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	6.8E-07	0	NA	6.8E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	3.4E-03	5.7E-03	NA	0.009
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	1.8E-03	2.0E-03	NA	3.8E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	3.2E-05	3.2E-05	NA	6.4E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	1.2E-03	1.9E-03	NA	3.1E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	2.2E-04	4.7E-04	NA	6.9E-04
<b>Total PAH HAPs</b>							<b>0.009</b>	<b>0.012</b>	<b>NA</b>	<b>0.021</b>
<b>Other semi-volatile HAPs</b>										
Phenol		PM/HAP	---	Organic PM	1.18%	0	1.7E-03	0	0	1.7E-03

NA = Not Applicable (no AP-42 Emission Factor)

**Methodology**

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] \* [Organic PM (tons/yr)]  
Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

PM = Particulate Matter  
HAP = Hazardous Air Pollutant  
POM = Polycyclic Organic Matter

**Appendix A.2: Limited Emissions Summary**  
**Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

**Organic Volatile-Based Compounds (Table 11.1-16)**

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
<b>VOC</b>		VOC	---	TOC	94%	100%	<b>1.66</b>	<b>5.18</b>	<b>0.44</b>	<b>7.28</b>
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	1.1E-01	1.3E-02	3.0E-02	0.159
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	8.1E-04	2.8E-03	2.2E-04	0.004
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	1.3E-02	5.7E-02	3.3E-03	0.073
<b>Total non-VOC/non-HAPS</b>					<b>7.30%</b>	<b>1.40%</b>	<b>0.129</b>	<b>0.073</b>	<b>0.034</b>	<b>0.24</b>
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	9.2E-04	1.7E-03	2.4E-04	2.8E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	1.7E-04	2.5E-04	4.5E-05	4.7E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	8.7E-04	2.0E-03	2.3E-04	3.1E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	2.3E-04	8.3E-04	6.1E-05	1.1E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	3.7E-06	2.1E-04	9.8E-07	2.1E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	2.7E-04	1.2E-03	7.0E-05	1.5E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	1.9E-03	0	5.1E-04	2.5E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	4.9E-03	2.0E-03	1.3E-03	0.008
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	1.6E-03	3.6E-02	4.1E-04	0.038
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	2.7E-03	5.2E-03	7.0E-04	0.009
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	3.2E-05	1.6E-05	8.4E-06	5.6E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	1.4E-05	0	1.4E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	1.3E-04	2.8E-04	3.4E-05	4.4E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	1.4E-04	0	3.6E-05	1.7E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	3.7E-03	3.2E-03	9.8E-04	0.008
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	2.3E-05	0	6.1E-06	2.9E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	7.2E-03	1.0E-02	1.9E-03	0.020
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	1.4E-03	3.0E-03	3.7E-04	4.7E-03
<b>Total volatile organic HAPs</b>					<b>1.50%</b>	<b>1.30%</b>	<b>0.027</b>	<b>0.067</b>	<b>0.007</b>	<b>0.101</b>

**Methodology**

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] \* [TOC (tons/yr)]

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

TOC = Total Organic Compounds

VOC = Volatile Organic Compound

HAP = Hazardous Air Pollutant

MTBE = Methyl tert butyl ether

**Appendix A.2: Limited Emissions Summary  
Material Storage Piles**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Note: Since the emissions from the storage piles are minimal, the limited emissions are equal to the unlimited emissions.

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$$E_f = 1.7 * (s/1.5) * (365-p) / 235 * (f/15)$$

where  $E_f$  = emission factor (lb/acre/day)  
 $s$  = silt content (wt %)  
 $p$  = 125 days of rain greater than or equal to 0.01 inches  
 $f$  = 15 % of wind greater than or equal to 12 mph

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.75	0.412	0.144
Limestone	1.6	1.85	3.75	1.267	0.444
Concrete	1.6	1.85	2.00	0.676	0.237
RAP	0.5	0.58	3.75	0.396	0.139
Gravel	1.6	1.85	0.75	0.253	0.089
Slag	3.8	4.40	2.00	1.605	0.562
Shingles	0.5	0.58	0.62	0.065	0.023
<b>Totals</b>				<b>4.68</b>	<b>1.64</b>

**Methodology**

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) \* (Maximum Pile Size (acres)) \* (ton/2000 lbs) \* (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) \* 35%

\*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

According to Babcock Paving, Inc., the concrete is consistent with #53 Limestone.

\*\*Maximum anticipated pile size (acres) provided by the source. The pile size of the slag and shingles were provided in tons and have been converted to acres based on the assumption the the piles are at maximum 8.5 feet in height.

PM2.5 = PM10

**Abbreviations**

RAP = recycled asphalt pavement  
 PM = Particulate Matter

PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Material Processing, Handling, Crushing, Screening, and Conveying  
associated with the Hot-Mix Asphalt Plant**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Batch or Continuous Drop Operations (AP-42 Section 13.2.4)**

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^{0.74} \cdot (U/5)^{1.3} \cdot (M/2)^{1.4}$$

where:  $E_f$  = Emission factor (lb/ton)

$k$ (PM) = 0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter $\leq 100$ $\mu\text{m}$ )
$k$ (PM10) = 0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter $\leq 10$ $\mu\text{m}$ )
$k$ (PM2.5) = 0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter $\leq 2.5$ $\mu\text{m}$ )
$U$ = 10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
$M$ = 4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
$E_f$ (PM) = 2.27E-03	lb PM/ton of material handled
$E_f$ (PM10) = 1.07E-03	lb PM10/ton of material handled
$E_f$ (PM2.5) = 1.62E-04	lb PM2.5/ton of material handled

Annual Asphalt Production Limitation = 850,000 tons/yr  
Percent Asphalt Cement/Binder (weight %) = 5.0%  
Maximum Material Handling Throughput = 807,500 tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	0.92	0.43	0.07
Front-end loader dumping of materials into feeder bins	0.92	0.43	0.07
Conveyor dropping material into dryer/mixer or batch tower	0.92	0.43	0.07
<b>Total (tons/yr)</b>	<b>2.75</b>	<b>1.30</b>	<b>0.20</b>

**Methodology**

The percent asphalt cement/binder provided by the source.

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]

Limited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] \* [Emission Factor (lb/ton)] \* (ton/2000 lbs)

Raw materials may include limestone, sand, reclaimed asphalt pavement (RAP), gravel, slag, recycled concrete, and other additives

\*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

**Material Screening and Conveying (AP-42 Section 19.2.2)**

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 19.2.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	2.18	0.97
Screening	0.025	0.0087	10.09	3.51
Conveying	0.003	0.0011	1.21	0.44
<b>Limited Potential to Emit (tons/yr) =</b>			<b>13.49</b>	<b>4.93</b>

**Methodology**

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]

Limited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] \* [Emission Factor (lb/ton)] \* (ton/2000 lbs)

Raw materials may include stone/gravel, slag, reclaimed asphalt pavement (RAP), and recycled concrete.

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

\*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

\*\*Assumes PM10 = PM2.5

**Abbreviations**

PM = Particulate Matter  
PM10 = Particulate Matter (<10  $\mu\text{m}$ )  
PM2.5 = Particulate Matter (<2.5  $\mu\text{m}$ )  
PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Material Processing, Handling, Crushing, Screening, and Conveying  
associated with the Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Batch or Continuous Drop Operations (AP-42 Section 13.2.4)**

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^k \cdot [(U/5)^{1.3} / (M/2)^{1.4}]$$

where:  $E_f$  = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
$E_f$ (PM) =	2.27E-03	lb PM/ton of material handled
$E_f$ (PM10) =	1.07E-03	lb PM10/ton of material handled
$E_f$ (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Maximum Material Throughput = 145 tons/hr  
 Material Throughput Limitation = 500,000 tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	0.57	0.27	0.04
Front-end loader dumping of materials into feeder bins	0.57	0.27	0.04
Conveyor dropping material into crusher	0.57	0.27	0.04
<b>Total (tons/yr)</b>	<b>1.70</b>	<b>0.80</b>	<b>0.12</b>

**Methodology**

The percent asphalt cement/binder provided by the source.  
 Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Limited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)  
 Raw materials include recycled concrete.  
 \*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

**Material Screening and Conveying (AP-42 Section 11.19.2)**

To estimate potential fugitive dust emissions from raw material crushing, and the accompanying screening and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	1.35	0.60
Screening	0.025	0.0087	6.25	2.18
Conveying	0.003	0.0011	0.75	0.28
			<b>8.35</b>	<b>3.05</b>

**Methodology**

Maximum Material Throughput (tons/hr) = [Maximum Capacity of the Equipment]  
 Limited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] \* [Emission Factor (lb/ton)] \* [ton/2000 lbs]  
 Raw materials include recycled concrete.  
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2  
 \*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).  
 \*\*Assumes PM10 = PM2.5

**Abbreviations**

PM = Particulate Matter  
 PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate matter (< 2.5 um)  
 PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary**  
**Unpaved Roads associated with the Hot-Mix Asphalt Plant**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Unpaved Roads at Industrial Site**

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

Annual Asphalt Production Limitation =	850,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	807,500	tons/yr
Maximum Asphalt Cement/Binder Throughput =	42,500	tons/yr
No. 2 Fuel Oil Limitation =	1,987,496	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	3.6E+04	1.4E+06	300	0.057	2048.2
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	3.6E+04	6.1E+05	300	0.057	2048.2
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	1.2E+03	5.7E+04	300	0.057	67.1
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.2E+03	1.4E+04	300	0.057	67.1
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.1E+02	9.2E+03	300	0.057	11.9
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.1E+02	2.5E+03	300	0.057	11.9
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	1.9E+05	3.7E+06	300	0.057	10924.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	1.9E+05	2.9E+06	300	0.057	10924.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	3.5E+04	1.5E+06	300	0.057	2012.3
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	3.5E+04	6.0E+05	300	0.057	2012.3
<b>Total</b>						<b>5.3E+05</b>	<b>1.1E+07</b>		<b>3.0E+04</b>

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

Mitigated Emission Factor,  $E_{ext} = E_f \cdot [(365 - P)/365]$   
 where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f$ =	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, $E_{ext}$ =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	6.24	1.59	0.16	4.10	1.05	0.10	2.05	0.52	0.05
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	6.24	1.59	0.16	4.10	1.05	0.10	2.05	0.52	0.05
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.204	0.052	0.01	0.134	0.034	3.4E-03	0.067	0.017	1.7E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.204	0.052	0.01	0.134	0.034	3.4E-03	0.067	0.017	1.7E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.036	0.009	9.3E-04	0.024	0.006	6.1E-04	0.012	0.003	3.0E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.036	0.009	9.3E-04	0.024	0.006	6.1E-04	0.012	0.003	3.0E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	33.29	8.48	0.85	21.89	5.58	0.56	10.94	2.79	0.28
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	33.29	8.48	0.85	21.89	5.58	0.56	10.94	2.79	0.28
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	6.13	1.56	0.16	4.03	1.03	0.10	2.02	0.51	0.05
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	6.13	1.56	0.16	4.03	1.03	0.10	2.02	0.51	0.05
<b>Totals</b>		<b>91.81</b>	<b>23.40</b>	<b>2.34</b>	<b>60.37</b>	<b>15.39</b>	<b>1.54</b>	<b>30.18</b>	<b>7.69</b>	<b>0.77</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter                      PM10 = Particulate Matter (<10 um)                      PM2.5 = Particulate Matter (<2.5 um)                      PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Unpaved Roads associated with the Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Unpaved Roads at Industrial Site**

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

Material Throughput Limitation =  $\frac{500,000}{200,000}$  tons/yr  
 Diesel Fuel Limitation =  $\frac{500,000}{200,000}$  gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	2.2E+04	8.8E+05	300	0.057	1268.3
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	2.2E+04	3.8E+05	300	0.057	1268.3
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.1E+01	9.3E+02	300	0.057	1.2
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.1E+01	2.5E+02	300	0.057	1.2
Concrete/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	1.2E+05	2.3E+06	300	0.057	6764.1
Concrete/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	1.2E+05	1.8E+06	300	0.057	6764.1
Concrete (crushed) Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	2.1E+04	8.5E+05	300	0.057	1183.7
Concrete (crushed) Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	2.1E+04	3.5E+05	300	0.057	1183.7
<b>Total</b>					<b>3.2E+05</b>	<b>6.5E+06</b>			<b>1.8E+04</b>

Average Vehicle Weight Per Trip =  $\frac{20.2}{0.057}$  tons/trip  
 Average Miles Per Trip =  $\frac{20.2}{0.057}$  miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.2	20.2	20.2	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f$ =	6.08	1.55	0.15	lb/mile
Mitigated Emission Factor, $E_{ext}$ =	4.00	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	3.86	0.98	0.10	2.54	0.65	0.06	1.27	0.32	0.03
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	3.86	0.98	0.10	2.54	0.65	0.06	1.27	0.32	0.03
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.004	0.001	9.3E-05	0.002	0.001	6.1E-05	0.001	0.000	3.1E-05
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.004	0.001	9.3E-05	0.002	0.001	6.1E-05	0.001	0.000	3.1E-05
Concrete/RAP Loader Full	Front-end loader (3 CY)	20.56	5.24	0.52	13.52	3.45	0.34	6.76	1.72	0.17
Concrete/RAP Loader Empty	Front-end loader (3 CY)	20.56	5.24	0.52	13.52	3.45	0.34	6.76	1.72	0.17
Concrete (crushed) Truck Leave Full	Dump truck (16 CY)	3.60	0.92	0.09	2.37	0.60	0.06	1.18	0.30	0.03
Concrete (crushed) Truck Enter Empty	Dump truck (16 CY)	3.60	0.92	0.09	2.37	0.60	0.06	1.18	0.30	0.03
<b>Totals</b>		<b>56.04</b>	<b>14.28</b>	<b>1.43</b>	<b>36.85</b>	<b>9.39</b>	<b>0.94</b>	<b>18.43</b>	<b>4.70</b>	<b>0.47</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Paved Roads associated with the Hot-Mix Asphalt Plant**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Paved Roads at Industrial Site**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Annual Asphalt Production Limitation = 850,000 tons/yr  
Percent Asphalt Cement/Binder (weight %) = 5.0%  
Maximum Material Handling Throughput = 807,500 tons/yr  
Maximum Asphalt Cement/Binder Throughput = 42,500 tons/yr  
No. 2 Fuel Oil Limitation = 1,987,496 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	3.6E+04	1.4E+06	300	0.057	2048.2
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	3.6E+04	6.1E+05	300	0.057	2048.2
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	1.2E+03	5.7E+04	300	0.057	67.1
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.2E+03	1.4E+04	300	0.057	67.1
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.1E+02	9.2E+03	300	0.057	11.9
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.1E+02	2.5E+03	300	0.057	11.9
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	1.9E+05	3.7E+06	300	0.057	10924.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	1.9E+05	2.9E+06	300	0.057	10924.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	3.5E+04	1.5E+06	300	0.057	2012.3
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	3.5E+04	6.0E+05	300	0.057	2012.3
<b>Total</b>					<b>5.3E+05</b>	<b>1.1E+07</b>			<b>3.0E+04</b>

Average Vehicle Weight Per Trip = 20.3 tons/trip  
Average Miles Per Trip = 0.057 miles/trip

Unmitigated Emission Factor, Ef = [k \* (sL)^0.91 \* (W)^1.02] (Equation 1 from AP-42 13.2.1)

where k = 

PM	PM10	PM2.5
0.011	0.0022	0.00054

 lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)  
W = 20.3 tons = average vehicle weight (provided by source)  
sL = 0.6 g/m<sup>2</sup> = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E \* [1 - (p/4N)]

Mitigated Emission Factor, Eext = Ef \* [1 - (p/4N)]  
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
N = 365 days per year

Unmitigated Emission Factor, Ef = 

PM	PM10	PM2.5
0.15	0.03	0.01

 lb/mile  
Mitigated Emission Factor, Eext = 

PM	PM10	PM2.5
0.14	0.03	0.01

 lb/mile  
Dust Control Efficiency = 50% (pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.15	0.03	0.01	0.14	0.03	0.01	0.07	0.01	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.15	0.03	0.01	0.14	0.03	0.01	0.07	0.01	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.005	0.001	2.4E-04	0.005	0.001	2.2E-04	0.002	4.6E-04	1.1E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.005	0.001	2.4E-04	0.005	0.001	2.2E-04	0.002	4.6E-04	1.1E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	8.9E-04	1.8E-04	4.4E-05	8.1E-04	1.6E-04	4.0E-05	4.1E-04	8.1E-05	2.0E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	8.9E-04	1.8E-04	4.4E-05	8.1E-04	1.6E-04	4.0E-05	4.1E-04	8.1E-05	2.0E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.81	0.16	0.04	0.74	0.15	0.04	0.37	0.07	0.02
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.81	0.16	0.04	0.74	0.15	0.04	0.37	0.07	0.02
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.15	0.03	0.01	0.14	0.03	0.01	0.07	0.01	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.15	0.03	0.01	0.14	0.03	0.01	0.07	0.01	0.00
<b>Totals</b>		<b>2.24</b>	<b>0.45</b>	<b>0.11</b>	<b>2.05</b>	<b>0.41</b>	<b>0.10</b>	<b>1.02</b>	<b>0.20</b>	<b>0.05</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / 5280 ft/mile  
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Paved Roads associated with the Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Paved Roads at Industrial Site**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Material Throughput Limitation =  tons/yr  
 Diesel Fuel Limitation =  gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	2.2E+04	8.8E+05	300	0.057	1268.3
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	2.2E+04	3.8E+05	300	0.057	1268.3
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.1E+01	9.3E+02	300	0.057	1.2
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.1E+01	2.5E+02	300	0.057	1.2
Concrete/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	1.2E+05	2.3E+06	300	0.057	6764.1
Concrete/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	1.2E+05	1.8E+06	300	0.057	6764.1
Concrete (crushed) Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	2.1E+04	8.5E+05	300	0.057	1183.7
Concrete (crushed) Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	2.1E+04	3.5E+05	300	0.057	1183.7
<b>Total</b>					<b>3.2E+05</b>	<b>6.5E+06</b>			<b>1.8E+04</b>

Average Vehicle Weight Per Trip =  tons/trip  
 Average Miles Per Trip =  miles/trip

Unmitigated Emission Factor, Ef = [k \* (sL)<sup>0.91</sup> \* (W)<sup>1.02</sup>] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.2	20.2	20.2	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m <sup>2</sup> = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E \* [1 - (p/4N)]

Mitigated Emission Factor, Eext =  $E * [1 - (p/4N)]$   
 where p =  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
 N =  days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	0.09	0.02	0.00	0.09	0.02	0.00	0.04	0.01	0.00
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	0.09	0.02	0.00	0.09	0.02	0.00	0.04	0.01	0.00
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	8.9E-05	1.8E-05	4.4E-06	8.1E-05	1.6E-05	4.0E-06	4.1E-05	8.1E-06	2.0E-06
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	8.9E-05	1.8E-05	4.4E-06	8.1E-05	1.6E-05	4.0E-06	4.1E-05	8.1E-06	2.0E-06
Concrete/RAP Loader Full	Front-end loader (3 CY)	0.50	0.10	0.02	0.46	0.09	0.02	0.23	0.05	0.01
Concrete/RAP Loader Empty	Front-end loader (3 CY)	0.50	0.10	0.02	0.46	0.09	0.02	0.23	0.05	0.01
Concrete (crushed) Truck Leave Full	Dump truck (16 CY)	0.09	0.02	0.00	0.08	0.02	0.00	0.04	0.01	0.00
Concrete (crushed) Truck Enter Empty	Dump truck (16 CY)	0.09	0.02	0.00	0.08	0.02	0.00	0.04	0.01	0.00
<b>Totals</b>		<b>1.36</b>	<b>0.27</b>	<b>0.07</b>	<b>1.25</b>	<b>0.25</b>	<b>0.06</b>	<b>0.62</b>	<b>0.12</b>	<b>0.03</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Cold Mix Asphalt Production and Stockpiles**

Company Name: Babcock Paving, Inc.  
Source Address: 6049 Work Street, Demotte, Indiana 46310  
Significant Permit Revision #: 073-35486-00041  
Reviewer: Hannah L. Desrosiers

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Limited VOC Emissions from the Sum of the Liquid Binders = 52.50 tons/yr

**Volatile Organic Compounds**

	Maximum weight % of VOC solvent in binder	Weight % VOC solvent in binder that evaporates	VOC Solvent Usage Limitation (tons/yr)	Limited PTE of VOC (tons/yr)	Liquid Binder Adjustment Ratio
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	55.26	52.50	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	75.00	52.50	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	210.00	52.50	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	113.15	52.50	2.155
Other asphalt with solvent binder	25.9%	2.5%	2,100.00	52.50	40.0
<b>Worst Case Limited PTE of VOC =</b>				<b>52.50</b>	

**Hazardous Air Pollutants**

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
<b>Limited PTE of Total HAPs (tons/yr) =</b>	<b>13.69</b>
<b>Limited PTE of Single HAP (tons/yr) =</b>	<b>4.73 Xylenes</b>

**Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents\***

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
<b>Total Organic HAPs</b>		<b>26.08%</b>	<b>0.33%</b>	<b>1.29%</b>	<b>0.68%</b>	<b>0.19%</b>
<b>Worst Single HAP</b>		<b>9.00%</b>	<b>0.31%</b>	<b>0.50%</b>	<b>0.23%</b>	<b>0.07%</b>
		<b>Xylenes</b>	<b>Naphthalene</b>	<b>Xylenes</b>	<b>Xylenes</b>	<b>Chrysene</b>

**Methodology**

Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] \* [VOC Solvent Usage Limitation (tons/yr)]

Limited PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] \* [Worst Case Limited PTE of VOC (tons/yr)]

Limited PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] \* [Worst Case Limited PTE of VOC (tons/yr)]

\*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

**Abbreviations**

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Gasoline Fuel Transfer and Dispensing Operation**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used. The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= \frac{0}{0.0} \text{ gallons/day} \\ &= \text{0.0 kgal/yr} \end{aligned}$$

**Volatile Organic Compounds**

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
<b>Total</b>		<b>0.00</b>

**Hazardous Air Pollutants**

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
<b>Limited PTE of Total HAPs (tons/yr) =</b>	<b>0.00</b>
<b>Limited PTE of Single HAP (tons/yr) =</b>	<b>0.00 Xylenes</b>

**Methodology**

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] \* [365 days/yr] \* [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] \* [Emission Factor (lb/kgal)] \* [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

\*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

**Abbreviations**

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.3: Unlimited PTE of the Revision  
Revision Summary**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Unlimited/Uncontrolled Potential to Emit (tons/yr)						
Criteria Pollutant	Emissions Generating Activity					Total (tons/yr)
	Crusher Generator Combustion	Fugitive Emissions				
		Material Processing and Handling	Material Crushing, Screening, and Conveying	Storage Piles	Unpaved and Paved Roads (worst case)	
PM	4.34	4.32	21.21	0.94	93.61	<b>124.41</b>
PM10	4.34	2.04	7.75	0.33	23.86	<b>38.31</b>
PM2.5	4.34	0.31	7.75	0.33	2.39	<b>15.11</b>
SO2	4.04	0	0	0	0	<b>4.04</b>
NOx	61.10	0	0	0	0	<b>61.10</b>
VOC	4.96	0	0	0	0	<b>4.96</b>
CO	13.17	0	0	0	0	<b>13.17</b>
<b>Hazardous Air Pollutant</b>						
HCl	0	0	0	0	0	<b>0</b>
Antimony	0	0	0	0	0	<b>0</b>
Arsenic	0	0	0	0	0	<b>0</b>
Beryllium	0	0	0	0	0	<b>0</b>
Cadmium	0	0	0	0	0	<b>0</b>
Chromium	0	0	0	0	0	<b>0</b>
Cobalt	0	0	0	0	0	<b>0</b>
Lead	0	0	0	0	0	<b>0</b>
Manganese	0	0	0	0	0	<b>0</b>
Mercury	0	0	0	0	0	<b>0</b>
Nickel	0	0	0	0	0	<b>0</b>
Selenium	0	0	0	0	0	<b>0</b>
1,1,1-Trichloroethane	0	0	0	0	0	<b>0</b>
1,3-Butadiene	5.39E-04	0	0	0	0	<b>5.39E-04</b>
Acetaldehyde	0.011	0	0	0	0	<b>0.011</b>
Acrolein	1.28E-03	0	0	0	0	<b>1.28E-03</b>
Benzene	0.013	0	0	0	0	<b>0.013</b>
Bis(2-ethylhexyl)phthalate	0	0	0	0	0	<b>0</b>
Dichlorobenzene	0	0	0	0	0	<b>0</b>
Ethylbenzene	0	0	0	0	0	<b>0</b>
Formaldehyde	0.016	0	0	0	0	<b>0.016</b>
Hexane	0	0	0	0	0	<b>0</b>
Phenol	0	0	0	0	0	<b>0</b>
Toluene	5.64E-03	0	0	0	0	<b>5.64E-03</b>
Total PAH Haps	2.32E-03	0	0	0	0	<b>2.32E-03</b>
Polycyclic Organic Matter	0	0	0	0	0	<b>0</b>
Xylene	3.93E-03	0	0	0	0	<b>3.93E-03</b>
<b>Total HAPs</b>	<b>0.05</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.053</b>
<b>"Worst" Single HAP</b>	<b>0.02</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.016</b>
	(formaldehyde)	n/a	n/a	n/a	n/a	(formaldehyde)

**Appendix A.3: Unlimited PTE of the Revision  
Reciprocating Internal Combustion Engines  
Diesel Fuel-Fired Crushing Unit (CR1) - Generator  
Output Rating (<=600 HP)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

Output Horsepower Rating (hp)	450.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	3,942,000
Maximum Diesel Fuel Usage (gal/yr)	201,372

	Pollutant						
	PM <sup>2</sup>	PM10 <sup>2</sup>	direct PM2.5 <sup>2</sup>	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal <sup>1</sup>	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	4.34	4.34	4.34	4.04	61.10	4.96	13.17

<sup>1</sup>The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>2</sup>Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<sup>3</sup>PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs <sup>3</sup>
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal <sup>4</sup>	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	1.29E-02	5.64E-03	3.93E-03	5.39E-04	0.016	0.011	1.28E-03	2.32E-03

<sup>3</sup>PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

<sup>4</sup>The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>5</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Potential Emission of Total HAPs (tons/yr)</b>	<b>0.053</b>
<b>Potential Emission of Worst Case HAPs (tons/yr)</b>	<b>0.016</b>

**Methodology**

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) \* 7000 (Btu/hp-hr) \* 1/19300 (lb/Btu) \* 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

**Appendix A.3: Unlimited PTE of the Revision  
Material Processing, Handling, Crushing, Screening, and Conveying  
associated with the Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Batch or Continuous Drop Operations (AP-42 Section 13.2.4)**

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$Ef = k \cdot (0.0032)^U \cdot (U/5)^{1.3} / (M/2)^{1.4}$   
 where: Ef = Emission factor (lb/ton)  
 k (PM) = 0.74 = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)  
 k (PM10) = 0.35 = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)  
 k (PM2.5) = 0.053 = particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)  
 U = 10.2 = worst case annual mean wind speed (Source: NOAA, 2006\*)  
 M = 4.0 = material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)  
 Ef (PM) = 2.27E-03 lb PM/ton of material handled  
 Ef (PM10) = 1.07E-03 lb PM10/ton of material handled  
 Ef (PM2.5) = 1.62E-04 lb PM2.5/ton of material handled

Maximum Material Throughput = 145 tons/hr  
 Maximum Material Handling Throughput = 1,270,200 tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	1.44	0.68	0.10
Front-end loader dumping of materials into feeder bins	1.44	0.68	0.10
Conveyor dropping material into crusher	1.44	0.68	0.10
<b>Total (tons/yr)</b>	<b>4.32</b>	<b>2.04</b>	<b>0.31</b>

**Methodology**

The percent asphalt cement/binder provided by the source.  
 Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)  
 Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives  
 \*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

**Material Crushing, Screening, and Conveying (AP-42 Section 11.19.2)**

To estimate potential fugitive dust emissions from raw material crushing, and the accompanying screening and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	3.43	1.52
Screening	0.025	0.0087	15.88	5.53
Conveying	0.003	0.0011	1.91	0.70
<b>Total</b>			<b>21.21</b>	<b>7.75</b>

**Methodology**

Maximum Material Throughput (tons/hr) = [Maximum Capacity of the Equipment]  
 Unlimited Potential to Emit (tons/yr) = [Maximum Material Throughput (tons/hr)] \* [Emission Factor (lb/ton)] \* [ton/2000 lbs] \* [8760 hrs/yr]  
 Raw materials include recycled concrete and reclaimed asphalt pavement (RAP).  
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2  
 \*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

\*\*Assumes PM10 = PM2.5

**Abbreviations**

PM = Particulate Matter  
 PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate matter (< 2.5 um)  
 PTE = Potential to Emit

**326 IAC 6-3-2(e) Allowable Rate of Emissions**

Operation	Process Rate (lbs/hr)	Process Weight Rate * (tons/hr)	Allowable Emissions (lbs/hr)
Truck Unloading	290,000	145.00	55.09
Feeder Bin Loading	290,000	145.00	55.09
Conveyor to crusher	290,000	145.00	55.09
Crushing	290,000	145.00	55.09
Screening	290,000	145.00	55.09
Conveying	290,000	145.00	55.09

**Methodology**

\* Process weight; weight rate: Total weight of all materials introduced into any source operation (326 IAC 1-2-59(a)).  
 Allowable Emissions (lb/hr) = 55.0(Process Weight Rate (lb/hr)\*0.11 - 40

**326 IAC 6-3 Compliance Determination**

Operation	Annual PM Emissions (tons/yr)	Conversion Factor	Hourly PM Emission Rate (lbs/hr)	Emission Control Device Required for Compliance?
Truck Unloading	1.44	0.23	0.33	No
Feeder Bin Loading	1.44	0.23	0.33	No
Conveyor to crusher	1.44	0.23	0.33	No
Crushing	3.43	0.23	0.78	No
Screening	15.88	0.23	3.63	No
Conveying	1.91	0.23	0.44	No

**Methodology**

Hourly PM Emission Rate (lbs/hr) = Annual PM Emissions (ton/yr) x Conversion Factor (2000 lbs/ton / 8760 hrs/yr)

**Appendix A.3: Unlimited PTE of the Revision  
Material Storage Piles  
associated with the Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$$E_f = 1.7 * (s/1.5) * (365-p) / 235 * (f/15)$$

where  $E_f$  = emission factor (lb/acre/day)  
 $s$  = silt content (wt %)  
 $p$  = 125 days of rain greater than or equal to 0.01 inches  
 $f$  = 15% of wind greater than or equal to 12 mph

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0	0.000	0.000
Limestone	1.6	1.85	0	0.000	0.000
Concrete	1.6	1.85	2.00	0.676	0.237
RAP	0.5	0.58	2.50	0.264	0.092
Gravel	1.6	1.85	0	0.000	0.000
Shingles	0.5	0.58	0	0.000	0.000
Slag	3.8	4.40	0	0.000	0.000
<b>Totals</b>				<b>0.94</b>	<b>0.33</b>

**Methodology**

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) \* (Maximum Pile Size (acres)) \* (ton/2000 lbs) \* (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) \* 35%

\*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

According to Babcock Paving, Inc., the concrete is consistent with #53 Limestone.

\*\*Maximum anticipated pile size (acres) provided by the source.

PM2.5 = PM10

**Abbreviations**

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

RAP - reclaimed asphalt pavement

**Appendix A.3: Unlimited PTE of the Revision  
Unpaved Roads associated with Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Unpaved Roads at Industrial Site**

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

Maximum Material Handling Throughput =  $\frac{1,270,200}{365}$  tons/yr  
Maximum No. 2 Fuel Oil Usage =  $\frac{201,372}{365}$  gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	5.7E+04	2.2E+06	300	0.057	3221.9
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	5.7E+04	9.6E+05	300	0.057	3221.9
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.1E+01	9.4E+02	300	0.057	1.2
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.1E+01	2.6E+02	300	0.057	1.2
Concrete/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	3.0E+05	5.8E+06	300	0.057	17183.4
Concrete/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	3.0E+05	4.5E+06	300	0.057	17183.4
Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	5.3E+04	2.2E+06	300	0.057	3007.1
Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	5.3E+04	9.0E+05	300	0.057	3007.1
<b>Total</b>					<b>8.2E+05</b>	<b>1.7E+07</b>			<b>4.7E+04</b>

Average Vehicle Weight Per Trip =  $\frac{20.2}{1}$  tons/trip  
Average Miles Per Trip =  $\frac{0.057}{1}$  miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.2	20.2	20.2	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

Mitigated Emission Factor,  $E_{ext} = E \cdot [(365 - P)/365]$   
where P =  $\frac{125}{365}$  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	6.08	1.55	0.15	lb/mile
Mitigated Emission Factor, $E_{ext} =$	4.00	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	9.79	2.50	0.25	6.44	1.64	0.16	3.22	0.82	0.08
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	9.79	2.50	0.25	6.44	1.64	0.16	3.22	0.82	0.08
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.004	0.001	0.00	0.002	0.001	0.00	0.001	0.000	0.00
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.004	0.001	0.00	0.002	0.001	0.00	0.001	0.000	0.00
Concrete/RAP Loader Full	Front-end loader (3 CY)	52.24	13.31	1.33	34.35	8.75	0.88	17.17	4.38	0.44
Concrete/RAP Loader Empty	Front-end loader (3 CY)	52.24	13.31	1.33	34.35	8.75	0.88	17.17	4.38	0.44
Concrete Truck Leave Full	Dump truck (16 CY)	9.14	2.33	0.23	6.01	1.53	0.15	3.01	0.77	0.08
Concrete Truck Enter Empty	Dump truck (16 CY)	9.14	2.33	0.23	6.01	1.53	0.15	3.01	0.77	0.08
<b>Totals</b>		<b>142.36</b>	<b>36.28</b>	<b>3.63</b>	<b>93.61</b>	<b>23.86</b>	<b>2.39</b>	<b>46.80</b>	<b>11.93</b>	<b>1.19</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit

**Appendix A.3: Unlimited PTE of the Revision  
Paved Roads associated with Crushing Unit (CR1)**

**Company Name:** Babcock Paving, Inc.  
**Source Address:** 6049 Work Street, Demotte, Indiana 46310  
**Significant Permit Revision #:** 073-35486-00041  
**Reviewer:** Hannah L. Desrosiers

**Paved Roads at Industrial Site**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Maximum Material Handling Throughput =  $\frac{1,270,200}{8,760}$  tons/yr  
Maximum No. 2 Fuel Oil Usage =  $\frac{201,372}{8,760}$  gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	5.7E+04	2.2E+06	300	0.057	3221.9
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	5.7E+04	9.6E+05	300	0.057	3221.9
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.1E+01	9.4E+02	300	0.057	1.2
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.1E+01	2.6E+02	300	0.057	1.2
Concrete/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	3.0E+05	5.8E+06	300	0.057	17183.4
Concrete/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	3.0E+05	4.5E+06	300	0.057	17183.4
Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	5.3E+04	2.2E+06	300	0.057	3007.1
Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	5.3E+04	9.0E+05	300	0.057	3007.1
<b>Total</b>					<b>8.2E+05</b>	<b>1.7E+07</b>			<b>4.7E+04</b>

Average Vehicle Weight Per Trip =  $\frac{20.2}{1}$  tons/trip  
Average Miles Per Trip =  $\frac{0.057}{1}$  miles/trip

Unmitigated Emission Factor,  $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$  (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.2	20.2	20.2	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m <sup>2</sup> = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E * [1 - (p/4N)]$

Mitigated Emission Factor,  $E_{ext} = E_f * [1 - (p/4N)]$   
where p =  $\frac{125}{365}$  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
N =  $\frac{365}{365}$  days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, $E_{ext} =$	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Concrete/RAP Truck Enter Full	Dump truck (16 CY)	0.24	0.05	0.01	0.22	0.04	0.01	0.11	0.02	0.01
Concrete/RAP Truck Leave Empty	Dump truck (16 CY)	0.24	0.05	0.01	0.22	0.04	0.01	0.11	0.02	0.01
Diesel Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	8.9E-05	1.8E-05	4.4E-06	8.2E-05	1.6E-05	4.0E-06	4.1E-05	8.2E-06	2.0E-06
Diesel Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	8.9E-05	1.8E-05	4.4E-06	8.2E-05	1.6E-05	4.0E-06	4.1E-05	8.2E-06	2.0E-06
Concrete/RAP Loader Full	Front-end loader (3 CY)	1.27	0.25	0.06	1.16	0.23	0.06	0.58	0.12	0.03
Concrete/RAP Loader Empty	Front-end loader (3 CY)	1.27	0.25	0.06	1.16	0.23	0.06	0.58	0.12	0.03
Concrete Truck Leave Full	Dump truck (16 CY)	0.22	0.04	0.01	0.20	0.04	0.01	0.10	0.02	0.00
Concrete Truck Enter Empty	Dump truck (16 CY)	0.22	0.04	0.01	0.20	0.04	0.01	0.10	0.02	0.00
<b>Totals</b>		<b>3.46</b>	<b>0.69</b>	<b>0.17</b>	<b>3.17</b>	<b>0.63</b>	<b>0.16</b>	<b>1.58</b>	<b>0.32</b>	<b>0.08</b>

**Methodology**

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] \* [Percent Asphalt Cement/Binder (weight %)]  
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]  
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]  
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] \* [Maximum trips per year (trip/yr)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]  
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter      PM10 = Particulate Matter (<10 um)      PM2.5 = Particulate Matter (<2.5 um)      PTE = Potential to Emit



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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*Commissioner*

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

**TO:** Rodney Urbano  
Babcock Paving, Inc.  
6049 Work Street  
DeMotte, IN 46310-8821

**DATE:** June 12, 2015

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

**SUBJECT:** Final Decision  
Federally Enforceable State Operating Permit (FESOP) Significant Permit Revision  
073-35486-00041

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

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

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

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

Final Applicant Cover letter.dot 6/13/2013



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204  
(800) 451-6027 • (317) 232-8603 • [www.idem.IN.gov](http://www.idem.IN.gov)

**Michael R. Pence**  
*Governor*

**Thomas W. Easterly**  
*Commissioner*

June 12, 2015

TO: Jasper County Public Library, Demotte Branch

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

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

**Applicant Name: Babcock Paving, Inc.**  
**Permit Number: 073-35486-00041**

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

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

Enclosures  
Final Library.dot 6/13/2013

# Mail Code 61-53

IDEM Staff	VHAUN 6/12/2015 Babcock Paving, Inc 073-35486-00041 FINAL		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Rodney Urbano Babcock Paving, Inc 6049 Work St DeMotte IN 46310-8821 (Source CAATS)										VIA CERTIFIED MAIL USPS
2		Demotte Town Council and Town Manager 112 Carnation Street SE Demotte IN 46310 (Local Official)										
3		Jasper County Commissioners 115 W. Washington Street Rensselaer IN 47978 (Local Official)										
4		Jasper County Health Department 105 W. Kellner St Rensselaer IN 47978-2623 (Health Department)										
5		Mr. Kenny Haun P.O. Box 280 Rensselaer IN 47978 (Affected Party)										
6		Demotte Public Library 901 Birch Street SW Demotte IN 46310 (Library)										
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<b>5</b>			