**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**
*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*
**Governor**

*Thomas W. Easterly*
**Commissioner**

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

TO: Interested Parties / Applicant

DATE: September 26, 2011

RE: E & B Paving, Inc. / 003-30070-03281

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

# Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot12/03/07

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# Federally Enforceable State Operating Permit Renewal
# OFFICE OF AIR QUALITY

## E & B Paving, Inc.
## 7320 Lower Huntington Road,
## Ft. Wayne, Indiana 46809

(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 2-8-11.1, 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.: F003-30070-03281 | |
|---|---|
| Issued by:<br><br>Iryn Calilung, Section Chief<br>Permits Branch<br>Office of Air Quality | Issuance Date: September 26, 2011<br><br>Expiration Date: September 26, 2021 |

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Attachment D: NESHAP Subpart CCCCCC - Area Source Standards for Source Category: Gasoline Dispensing Facilities [40 CFR 63, Subpart 6C] [326 IAC 20]

## 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 hot-mix asphalt plant, and cold-mix asphalt production operation. Recycled asphalt pavement (RAP) is crushed on-site, and blast furnace slag, electric arc furnace steel mill slag, and/or asbestos-free recycled shingles are processed in the aggregate mix. This source does not grind any shingles on-site.

| | |
|---|---|
| Source Address: | 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809 |
| General Source Phone Number: | (765) 643-5358 |
| SIC Code: | 2951 (Asphalt Paving Mixtures and Blocks) |
| County Location: | Allen |
| Source Location Status: | Attainment for all criteria pollutants |
| Source Status: | Federally Enforceable State Operating Permit Program<br>Minor Source, under PSD and Emission Offset Rules<br>Minor Source, Section 112 of the Clean Air Act<br>Not 1 of 28 Source Categories |

### 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:

(a) One (1) hot-mix asphalt drum dryer/mixer, identified as EU-01, constructed in 2004, with a maximum throughput capacity of 350 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) 100 million British thermal units (MMBtu) per hour natural gas fired dryer burner, using #2 distillate fuel oil, refinery blend fuel oil, residual fuel oil, and waste oil as backup fuels, equipped with one (1) baghouse for particulate control and exhausting through one (1) stack, identified as stack SV-1. This source produces cold mix asphalt. No grinding of shingles occurs at this source.

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

(1) Three (3) asphalt mix storage silos;

(2) Raw material storage piles, including:

(i) Aggregate storage pile(s), total capacity 50,000 tons;

(ii) Reclaimed asphalt pavement (RAP) storage pile(s), total capacity 20,000 tons;

(iii) Blast Furnace and/or Steel Slag storage pile(s), total capacity 10,000 tons; and

(iv) Recycled asphalt shingles pile(s), total capacity 3,000 tons.

(3) Seven (7) feed bins, including:

(i) Six (6) cold feed bins for coarse to fine aggregate; and

(ii) One (1) feed bin for recycled asphalt pavement and recycled shingles.

(4) Five (5) conveyors, including:

(i) Three (3) conveyors for transporting coarse to fine aggregates to the drum mixer;

(ii) One (1) conveyor for transporting recycled asphalt pavement and recycled shingles to the drum mixer; and

(iii) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum hot-mix asphalt operation is considered an affected facility.

(c) One (1) #2 diesel fuel-fired portable crusher for processing reclaimed asphalt pavement (RAP), identified as SV-3, constructed in 2010, with a maximum throughput capacity of 300 tons of RAP per hour.

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this 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) 1.3 million British Thermal Units per hour (MMBtu/hr) natural gas-fired hot oil heater, identified as SV-2, constructed in 1996, and exhausting to stack SV-2; [326 IAC 6-2]

(b) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such as filling of tanks, locomotives, automobiles, having storage capacity less than or equal to ten thousand five hundred (10,500) gallons;

Under 40 CFR 60, Subpart CCCCCC, the units comprising this operation are considered affected facilities.

(c) Five (5) storage tanks, exhausting at stacks SV-3, SV-4, SV-5, SV-6, and SV-7, including:

(1) Three (3) liquid asphalt cement storage tanks, identified as Tank-01, Tank-02, and Tank-03, constructed in 2004, each with a maximum storage capacity of 30,000 gallons;

(2) One (1) fuel oil storage tank, identified as Tank-04, constructed in 2004, with a maximum storage capacity of 20,000 gallons; and

(3) One (1) emulsion tack storage tank, identified as Tank-05, constructed in 2004, with a maximum storage capacity of 12,000 gallons.

(d) Combustion source flame safety purging on startup;

(e) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu/hr;

(f) 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;

(g) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

(h) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;

(i) 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;

(j) Closed loop heating and cooling systems;

(k) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(l) A materials laboratory as defined in 326 IAC 2-7-1(21)(D); and

(m) Paved and unpaved roads and parking lots with public access. [326 IAC 6-5]

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

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]

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)]

(a) This permit, F003-30070-03281, 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]

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]

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)]

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)]

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)]

(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)]

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

(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]

(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
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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 F003-30070-03281 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)]

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]

(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)]

(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
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(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) through (d) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
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) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

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

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

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

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

B.19 Source Modification Requirement [326 IAC 2-8-11.1]

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]

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 one hundred (100) pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed five hundred fifty-one thousandths (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) and greenhouse gases (GHGs), 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.

(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 $CO_2$ equivalent emissions ($CO_2e$) 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]

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

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

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

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

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

C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

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]

(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]

(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]

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

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

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

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, 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 or the date of initial startup, whichever is later, 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).

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

C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

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

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

**Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]**

C.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]

(a) Records of all required monitoring data, reports, and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

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

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported 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

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:**

(a) One (1) hot-mix asphalt drum dryer/mixer, identified as EU-01, constructed in 2004, with a maximum throughput capacity of 350 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) 100 million British thermal units (MMBtu) per hour natural gas fired dryer burner, using #2 distillate fuel oil, refinery blend fuel oil, residual fuel oil, and waste oil as backup fuels, equipped with one (1) baghouse for particulate control and exhausting through one (1) stack, identified as stack SV-1. This source produces cold mix asphalt. No grinding of shingles occurs at this source.

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

(1) Three (3) asphalt mix storage silos;

(2) Raw material storage piles, including:

(i) Aggregate storage pile(s), total capacity 50,000 tons;

(ii) Reclaimed asphalt pavement (RAP) storage pile(s), total capacity 20,000 tons;

(iii) Blast Furnace and/or Steel Slag storage pile(s), total capacity 10,000 tons; and

(iv) Recycled asphalt shingles pile(s), total capacity 3,000 tons.

(3) Seven (7) feed bins, including:

(i) Six (6) cold feed bins for coarse to fine aggregate; and

(ii) One (1) feed bin for recycled asphalt pavement and recycled shingles.

(4) Five (5) conveyors, including:

(i) Three (3) conveyors for transporting coarse to fine aggregates to the drum mixer;

(ii) One (1) conveyor for transporting recycled asphalt pavement and recycled shingles to the drum mixer; and

(iii) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum hot-mix asphalt operation is considered an affected facility.

(c) One (1) #2 diesel fuel-fired portable crusher for processing reclaimed asphalt pavement (RAP), identified as SV-3, constructed in 2010, with a maximum throughput capacity of 300 tons of RAP per hour.

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

**Insignificant Activities:** Boilers

(a) One (1) 1.3 million British Thermal Units per hour (MMBtu/hr) natural gas-fired hot oil heater, identified as SV-2, constructed in 1996, and exhausting to stack SV-2; [326 IAC 6-2]

(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 [326 IAC 2-2]]

In order to render 326 IAC 2-2 not applicable;

(a) The amount of hot-mix asphalt processed shall not exceed 700,000 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 0.246 pounds per ton of asphalt 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.

Note: The source has opted to limit source-wide potential to emit PM to less than 125 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

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

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

(a) The amount of hot-mix asphalt processed shall not exceed 700,000 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 0.105 pounds per ton of asphalt processed.

(c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.120 pounds per ton of asphalt processed.

(d) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

(e) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, VOC and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, 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.

Note: The source has opted to limit source-wide potential to emit PM10, PM2.5, SO2, VOC, and CO, to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

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 Limits: SO2, GHGs as CO2e, 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 326 IAC 2-2 and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following:

(a) Fuel and Slag Specifications

(1) The sulfur content of the No. 2 fuel oil shall not exceed 0.50% by weight.

(2) The sulfur content of the refinery blend / residual (No. 4, No. 5, or No. 6) fuel oil shall not exceed 0.75% by weight.

(3) The sulfur content of the waste fuel oil shall not exceed 1.00% percent by weight.

(4) The waste oil combusted shall not contain more than 1.00% ash, 0.20% chlorine, and 0.01% lead.

(5) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of waste oil burned.

(6) The sulfur content of the #2 diesel fuel oil shall not exceed 0.50% by weight.

(7) The sulfur content of the Blast Furnace slag shall not exceed 1.10% by weight.

(8) The SO2 emissions from the dryer/mixer shall not exceed 0.540 pounds per ton of Blast Furnace slag processed in the aggregate mix.

(9) The sulfur content of the Steel slag shall not exceed 0.66% by weight.

(10) The SO2 emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of Steel slag processed in the aggregate mix.

(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 494 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month;

(B) No. 2 fuel oil usage shall not exceed 864,007 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(C) Refinery blend / Residual (No. 4, No. 5, and No. 6) fuel oil usage shall not exceed 520,973 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(D) Waste oil usage shall not exceed 417,310 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

(E) The Blast Furnace slag usage shall not exceed 67,500 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) When combusting only one type of fuel per twelve (12) consecutive month period in the #2 diesel fuel-fired crusher, the usage of fuel shall be limited as follows:

(A) Diesel fuel oil usage shall not exceed 5,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

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

(c) Multiple Fuel and Slag Usage Limitation:
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner and #2 diesel fuel-fired crusher, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer and #2 diesel fuel-fired crusher shall be limited as follows:

(1) $SO_2$ emissions from the dryer/mixer shall not exceed 48.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) NOx emissions from the dryer/mixer and #2 diesel fuel-fired crusher, combined, shall not exceed 48.43 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(3) CO2 equivalent emissions (CO2e) from the dryer/mixer shall not exceed 29,855.11 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 SO2, NOx, greenhouse gases (GHGs as CO2e), and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO2 and NOx to less than 100 tons per twelve (12) consecutive month period, each, greenhouse gases to less than 100,000 tons $CO_2$ equivalent ($CO_2e$) emissions 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 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.

Note: The source has opted to limit source-wide potential to emit SO2 and NOx to less than 50 tons per twelve (12) consecutive month period, greenhouse gases to less than 50,000 tons $CO_2$ equivalent emissions ($CO_2e$) per twelve (12) consecutive month period, any single HAP to less than five (5) tons per twelve (12) consecutive month period, and total

HAPs to less than twelve and five tenths (12.5) tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

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

Pursuant to 326 IAC 6-2-3, the particulate emissions from the hot oil heater, identified as SV-2, shall not exceed six tenths (0.6) pounds of particulate matter per MMBtu heat input.

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

(a) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the existing portable recycled asphalt pavement (RAP) system shall not exceed 63.00 pounds per hour when operating at a process weight rate of 300 tons (or 600,000 pounds) per hour.

The pound per hour limitation was 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:
$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

(b) Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limit listed above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gases.

D.1.6 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1] [326 IAC 7-2-1]

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

(1) The sulfur dioxide (SO2) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per MMBtu when using distillate oil.

(2) The sulfur dioxide (SO2) 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 is considered distillate oil, and refinery blend / residual (No. 4, No. 5, and No. 6) fuel oil, and waste oil are considered residual oils.

(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)]

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

(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]

(a) 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.

(b) In order to demonstrate compliance with Condition D.1.3(a)(8), when using Blast Furnace slag, the Permittee shall perform SO2 testing for the aggregate dryer within one hundred eighty (180) days of initial use of Blast Furnace slag in the aggregate mix, utilizing methods as approved by the Commissioner. Testing shall only be performed if the company has not previously performed SO2 testing while using Blast Furnace slag in the aggregate mix at one of their other Indiana facilities. Testing shall be conducted in accordance with Section C- Performance Testing.

D.1.10 Sulfur Dioxide ($SO_2$) Emissions and Sulfur Content

***Fuel Oil***

(a) Compliance with the fuel limitations established in Conditions D.1.3(a)(1) through D.1.3(a)(3) and D.1.6 shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), 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.

(i) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and

(ii) 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 100 MMBtu/hr 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 limitation established in Condition D.1.3(a)(7) shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), 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.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 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.

***Steel Slag***

(c) Compliance with the Steel slag limitations established in Condition D.1.3(a)(9) shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), 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.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 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 and #2 diesel fuel-fired crusher, in conjunction with the use of slag in the aggregate mix, the Permittee shall limit fuel usage according to the following formulas:

(a) Sulfur Dioxide (SO2) Emission Calculation

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

*where*:
S = tons of sulfur dioxide emissions for a 12-month consecutive period
G = million cubic feet of natural gas used in the last 12 months
O = gallons of No. 2 fuel oil used in the last 12 months
R = gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil used in the last 12 months
W = gallons of Waste oil used in the last 12 months
B = tons of Blast Furnace slag used in the last 12 months
T = tons of Steel slag used in the last 12 months

*Emission Factors*
$E_G$ = 0.60 lb/million cubic feet of natural gas
$E_O$ = 71.0 lb/1000 gallons of No. 2 fuel oil
$E_R$ = 78.5 lb/1000 gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil
$E_W$ = 147 lb/1000 gallons of Waste oil
$E_B$ = 0.54 lb/ton of Blast Furnace slag used
$E_T$ = 0.0014 lb/ton of Steel slag used

(b) Nitrogen Oxides (NOx) Emission Calculation

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

*where:*
N = tons of nitrogen oxide emissions for a 12-month consecutive period
G = million cubic feet of natural gas used in the last 12 months
O = gallons of No. 2 fuel oil used in the last 12 months
R = gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil used in the last 12 months
W = gallons of Waste oil used in the last 12 months
D = gallons of #2 diesel fuel oil used in the last 12 months

*Emission Factors*
$E_G$ = 190 lb/million cubic feet of natural gas
$E_O$ = 24.0 lb/1000 gallons of No. 2 fuel oil
$E_R$ = 47.0 lb/1000 gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil
$E_W$ = 19.0 lb/1000 gallons of Waste oil
$E_D$ = 604.17 lb/1000 gallons of #2 diesel fuel oil

(c) CO2 Equivalent (CO2e) Emission Calculations

$$CO_2 = \frac{[G(X_G) + O(X_O) + R(X_R) + W(X_W)]}{2{,}000}$$

$$CH_4 = \frac{[G(X_G) + O(X_O) + R(X_R) + W(X_W)]}{2{,}000}$$

$$N_2O = \frac{[G(X_G) + O(X_O) + R(X_R) + W(X_W)]}{2{,}000}$$

$$CO_2e = \sum[(CO_2 \times CO_2\ GWP) + (CH_4 \times CH_4\ GWP) + (N_2O \times N_2O\ GWP)]$$

*Where:*
$CO_2$ = tons of $CO_2$ emissions for previous 12 consecutive month period;
$CH_4$ = tons of $CH_4$ emissions for previous 12 consecutive month period;
$N_2O$ = tons of $N_2O$ emissions for previous 12 consecutive month period;
$CO_2e$ = tons of $CO_2e$ equivalent emissions for previous 12 consecutive month period;

G = million cubic feet of natural gas used in previous 12 months;
O = gallons of No. 2 fuel oil used in previous 12 months;
R = gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil used in previous 12 months
W = gallons of waste oil used in dryer/mixer in previous 12 months.

*Emission Factors - CO2:*
$X_G$ = 120,161.84 pounds per million cubic feet of natural gas;
$X_O$ = 22,501.41 x $10^{-3}$ pounds per gallon of No. 2 fuel oil;
$X_R$ = 24,835.04 x $10^{-3}$ pounds per gallon of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil; and
$X_W$ = 22,024.15 x $10^{-3}$ pounds per gallon of waste oil;

*Emission Factors - CH4:*
$X_G$ = 2.49 pounds per million cubic feet of natural gas;
$X_O$ = 0.00091 pounds per gallon of No. 2 fuel oil;
$X_R$ = 0.00100 pounds per gallon of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil; and
$X_W$ = 0.00089 pounds per gallon of waste oil;

*Emission Factors - N2O:*
$X_G$ = 2.20 pounds per million cubic feet of natural gas;
$X_O$ = 0.00026 pounds per gallon of No. 2 fuel oil;
$X_R$ = 0.00053 pounds per gallon of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil; and
$X_W$ = 0.00018 pounds per gallon of waste oil;

*Greenhouse Warming Potentials (GWP)*
Carbon dioxide (CO2) = 1
Methane (CH4) = 21
Nitrous oxide (N2O) = 310

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 second shingles do not contain asbestos; or

(2) Analyzing a sample of the factory second shingles delivery to determine the asbestos content of the factory second 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 from the conveyors, screens, material transfer points, crusher, and dryer/mixer stack (SV-1) exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. 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 the normal range of two (2.0) and eight (8.0) inches of water or a range established during the latest stack test, 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. 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 and D.1.6, 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 and D.1.6.

(1) Calendar dates covered in the compliance determination period;

(2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide, nitrogen oxide, and CO2 equivalent (CO2e) 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 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:

(i) Fuel supplier certifications;

(ii) The name of the fuel supplier; and

(iii) A statement from the fuel supplier that certifies the sulfur content of the No. 2 and waste oil, and the chlorine content of 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:

(i) Blast furnace and steel slag supplier certifications;

(ii) The name of the blast furnace and steel slag supplier; and

(iii) 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, the Permittee shall maintain records of visible emission notations of the dryer/mixer stack (SV-1) 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.1.15, 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).

(f) 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

A quarterly summary of the information to document compliance status with Conditions D.1.1(a), D.1.2(a), and D.1.3, 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 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 D.2 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description:**

(d) 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]

(a) Pursuant to 326 IAC 2-8-4, the VOC emissions from the sum of the binders shall not exceed 31.11 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 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 32.75 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 44.45 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 124.45 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 67.05 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 1,244.47 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) When using more than one liquid binder 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 VOC emissions 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, and render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD)) not applicable.

Note: The source has opted to limit source-wide potential to emit VOCs to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

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

D.2.3 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.2(c)(1) through (5), 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(c)(1) through (5).

(1) Calendar dates covered in the compliance determination period;

(2) Cutback asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;

(3) VOC solvent content by weight of the cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and

(4) 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

A quarterly summary of the information to document the compliance status with Condition D.2.2 shall be submitted 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 Plant

(a) One (1) hot-mix asphalt drum dryer/mixer, identified as EU-01, constructed in 2004, with a maximum throughput capacity of 350 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) 100 million British thermal units (MMBtu) per hour natural gas fired dryer burner, using #2 distillate fuel oil, refinery blend fuel oil, residual fuel oil, and waste oil as backup fuels, equipped with one (1) baghouse for particulate control and exhausting through one (1) stack, identified as stack SV-1. This source produces cold mix asphalt. No grinding of shingles occurs at this source.

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

(1) Three (3) asphalt mix storage silos;

(2) Raw material storage piles, including:

(i) Aggregate storage pile(s), total capacity 50,000 tons;

(ii) Reclaimed asphalt pavement (RAP) storage pile(s), total capacity 20,000 tons;

(iii) Blast Furnace and/or Steel Slag storage pile(s), total capacity 10,000 tons; and

(iv) Recycled asphalt shingles pile(s), total capacity 3,000 tons.

(3) Seven (7) feed bins, including:

(i) Six (6) cold feed bins for coarse to fine aggregate; and

(ii) One (1) feed bin for recycled asphalt pavement and recycled shingles.

(4) Five (5) conveyors, including:

(i) Three (3) conveyors for transporting coarse to fine aggregates to the drum mixer;

(ii) One (1) conveyor for transporting recycled asphalt pavement and recycled shingles to the drum mixer; and

(iii) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum hot-mix asphalt operation 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]

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]

The Permittee shall perform the stack testing required under NSPS 40 CFR 60, Subpart I, utilizing methods as approved by the Commissioner to document compliance with Condition E.1.2. 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 Section C - Performance Testing.

## SECTION E.2 NSPS REQUIREMENTS

**Emissions Unit Description:** Recycled Asphalt Pavement (RAP) Crushing Operation

(c) One (1) #2 diesel fuel-fired portable crusher for processing reclaimed asphalt pavement (RAP), identified as SV-3, constructed in 2010, with a maximum throughput capacity of 300 tons of RAP per hour.

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 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 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.2.2 NSPS Subpart OOO Requirements - Standards of Performance for Nonmetallic Mineral Processing Plants [40 CFR Part 60, Subpart OOO] [326 IAC 12-1]

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

(1) 40 CFR 60.670(a), (d), (e), and (f)
(2) 40 CFR 60.671
(3) 40 CFR 60.672(b), (d), and (e)
(4) 40 CFR 60.673
(5) 40 CFR 60.674(b)
(6) 40 CFR 60.675(a), (c)(1)(i), (ii), (iii), (c)(3), (d), (e), (g), and (i)
(7) 40 CFR 60.676(a), (b)(1), (f), (h), (i), (j), and (k)
(8) Table 1 and Table 3

E.2.3 Testing Requirements [40 CFR Part 60, Subpart OOO] [326 IAC 12-1] [326 IAC 2-8-5(a)(1),(4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition E.2.2, the Permittee shall perform testing for fugitive emissions from affected facilities without water sprays, as required under NSPS 40 CFR 60, Subpart OOO, not later than five (5) years from the most recent valid compliance demonstration, utilizing methods approved by the Commissioner. Testing shall only be performed if the company has not previously performed testing for the same crusher at one of their other Indiana facilities. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

**Note:** Pursuant to §60.674(b)(1), 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.

## SECTION E.3 NESHAPs REQUIREMENTS

**Emissions Unit Description:** Gasoline Dispensing Facility

(b) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such as filling of tanks, locomotives, automobiles, having storage capacity less than or equal to ten thousand five hundred (10,500) gallons;

Under 40 CFR 60, Subpart CCCCCC, the units comprising this operation are considered affected facilities.

(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 2-7-5(1)]**

E.3.1 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 63.11130, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, as specified in Table 3 of 40 CFR Part 63, Subpart CCCCCC in accordance with schedule in 40 CFR 63 Subpart CCCCCC

(b) Pursuant to 40 CFR 63.10, 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 National Emissions Standards for Hazardous Air Pollutants for Source Category Gasoline Dispensing Facilities [40 CFR Part 63, Subpart CCCCCC]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart CCCCCC (included as Attachment D), beginning on January 10, 2011, as follows:

(1) 40 CFR 63. 11110;

(2) 40 CFR 63. 11111(a), (b), (e), (f);

(3) 40 CFR 63. 11112(a), (d);

(4) 40 CFR 63. 11113(b), (c);

(5) 40 CFR 63. 11116;

(6) 40 CFR 63. 11130;

(7) 40 CFR 63. 11131;

(8) 40 CFR 63. 11132; and

(9) Table 3

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

## FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: E & B Paving, Inc.
Source Address: 7320 Lower Huntington Road,, Ft. Wayne, Indiana 46809
FESOP Permit No.: F003-30070-03281

**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.<br><br>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: E & B Paving, Inc.
Source Address: 7320 Lower Huntington Road,, Ft. Wayne, Indiana 46809
FESOP Permit No.: F003-30070-03281

**This form consists of 2 pages** **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- 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
- 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

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<br>Describe: |
| Type of Pollutants Emitted: TSP, PM-10, $SO_2$, VOC, $NO_X$, 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: E & B Paving, Inc.
Source Address: 7320 Lower Huntington Road,, Ft. Wayne, Indiana 46809
FESOP Permit No.: F003-30070-03281
Facility: Dryer/Mixer Burner (SV-1)
Parameter: **Hot-mix Asphalt Production**
Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 700,000 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: E & B Paving, Inc.
Source Address: 7320 Lower Huntington Road,, Ft. Wayne, Indiana 46809
FESOP Permit No.: F003-30070-03281
Facility: Dryer/Mixer (SV-1) and #2 Diesel Fuel-Fired Crusher

Parameter: **Fuel & Slag Usage / SO2, NOx, and CO2e emissions**

Emission Limits: *Sulfur dioxide ($SO_2$)* emissions shall not exceed 48.90 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 oxides (NOx)* emissions shall not exceed 48.43 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).

*CO2 equivalent emissions (CO2e)* shall not exceed 29,855.11 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 and #2 diesel fuel-fired crusher, 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)** |
|---|---|
| Dryer/Mixer Burner | |
| Natural Gas (million cubic feet) | 494 |
| No. 2 Distillate Fuel Oil (gallons) | 864,007 |
| Refinery blend / Residual (No. 4, No. 5, and No. 6) Fuel Oil (gallons) | 520,973 |
| Waste Oil (gallons) | 417,310 |
| Blast Furnace Slag (tons) | 67,500 |
| #2 Diesel Fuel-Fired Crusher | |
| #2 Diesel Fuel Oil (gallons) | 5,000 |

Facility: Cold-mix Asphalt Production

Parameter: **Binder Usage / VOC Emissions**

Emission Limits: VOC emissions from the sum of the binders shall not exceed 31.11 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

| **Type of Binder** | **Binder Usage Limit (per 12 consecutive month period)** |
|---|---|
| Cutback Asphalt Rapid Cure | 32.75 |
| Cutback Asphalt Medium Cure | 44.45 |
| Cutback Asphalt Slow Cure | 124.45 |
| Emulsified Asphalt | 67.05 |
| Other Asphalt | 1,244.47 |

**FESOP Quarterly Report - Fuel & Slag Usage / SO2, NOx, and CO2e 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) | Nitrogen Oxides (NOx) Emissions (tons per 12 months) | CO2 equivalent (CO2e) Emissions (tons per 12 months) |
| Month 1 | Natural Gas (million cubic feet) | | | | | | |
| | No. 2 Fuel Oil (gallons) | | | | | | |
| | Refinery Blend Fuel Oil (gallons) | | | | | | |
| | Waste Fuel Oil (gallons) | | | | | | |
| | Blast Furnace Slag (tons) | | | | | | |
| | Steel Slag Usage (tons) | | | | | | |
| | #2 Diesel Fuel Oil (gallons) | | | | | | |
| Month 2 | Natural Gas (million cubic feet) | | | | | | |
| | No. 2 Fuel Oil (gallons) | | | | | | |
| | Refinery Blend Fuel Oil (gallons) | | | | | | |
| | Waste Fuel Oil (gallons) | | | | | | |
| | Blast Furnace Slag (tons) | | | | | | |
| | Steel Slag Usage (tons) | | | | | | |
| | #2 Diesel Fuel Oil (gallons) | | | | | | |
| Month 3 | Natural Gas (million cubic feet) | | | | | | |
| | No. 2 Fuel Oil (gallons) | | | | | | |
| | Refinery Blend Fuel Oil (gallons) | | | | | | |
| | Waste Fuel Oil (gallons) | | | | | | |
| | Blast Furnace Slag (tons) | | | | | | |
| | Steel Slag Usage (tons) | | | | | | |
| | #2 Diesel Fuel Oil (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 - Binder Usage / VOC Emissions**



QUARTER: _____ YEAR:_____

| Month | Fuel Types (units) | Column 1<br>Usage<br>This Month | Column 2<br>Usage<br>Previous 11 Months | Column 1 + Column 2<br>Usage<br>12 Month Total | Equation Results<br>VOC Emissions (tons per 12 months) |
|---|---|---|---|---|---|
| Month 1 | Cutback asphalt rapid cure liquid binder (million cubic feet) | | | | |
| | Cutback asphalt medium cure liquid binder (gallons) | | | | |
| | Cutback asphalt slow cure liquid binder (gallons) | | | | |
| | Emulsified asphalt with solvent liquid binder | | | | |
| | Other asphalt with solvent liquid binder | | | | |
| Month 2 | Cutback asphalt rapid cure liquid binder (million cubic feet) | | | | |
| | Cutback asphalt medium cure liquid binder (gallons) | | | | |
| | Cutback asphalt slow cure liquid binder (gallons) | | | | |
| | Emulsified asphalt with solvent liquid binder | | | | |
| | Other asphalt with solvent liquid binder | | | | |
| Month 3 | Cutback asphalt rapid cure liquid binder (million cubic feet) | | | | |
| | Cutback asphalt medium cure liquid binder (gallons) | | | | |
| | Cutback asphalt slow cure liquid binder (gallons) | | | | |
| | 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: _____

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

| Type of Binder | Adjustment Factor |
|---|---|
| Cutback Asphalt Rapid Cure | 1.053 |
| Cutback Asphalt Medium Cure | 1.429 |
| Cutback Asphalt Slow Cure | 4.0 |
| 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: E & B Paving, Inc.
Source Address: 7320 Lower Huntington Road,, Ft. Wayne, Indiana 46809
FESOP Permit No.: F003-30070-03281

**Months:** _____ **to** _____ **Year:** _____



| | |
|---|---|
| This report shall be submitted quarterly based on a calendar year. 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". | |
| ☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD. | |
| ☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD | |
| **Permit Requirement** (specify permit condition #) | |
| **Date of Deviation:** | **Duration of Deviation:** |
| **Number of Deviations:** | |
| **Probable Cause of Deviation:** | |
| **Response Steps Taken:** | |
| **Permit Requirement** (specify permit condition #) | |
| **Date of Deviation:** | **Duration of Deviation:** |
| **Number of Deviations:** | |
| **Probable Cause of Deviation:** | |
| **Response Steps Taken:** | |

| | |
|---|---|
| **Permit Requirement** (specify permit condition #) | |
| **Date of Deviation:** | **Duration of Deviation:** |
| **Number of Deviations:** | |
| **Probable Cause of Deviation:** | |
| **Response Steps Taken:** | |
| **Permit Requirement** (specify permit condition #) | |
| **Date of Deviation:** | **Duration of Deviation:** |
| **Number of Deviations:** | |
| **Probable Cause of Deviation:** | |
| **Response Steps Taken:** | |
| **Permit Requirement** (specify permit condition #) | |
| **Date of Deviation:** | **Duration of Deviation:** |
| **Number of Deviations:** | |
| **Probable Cause of Deviation:** | |
| **Response Steps Taken:** | |

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

**FEDERALLY ENFORCEABLE**
**STATE OPERATING PERMIT RENEWAL**

**OFFICE OF AIR QUALITY**

**E & B Paving, Inc.**
**7320 Lower Huntington Road,**
**Ft. Wayne, Indiana 46809**

**Attachment A**

# HOT-MIX ASPHALT CONCRETE PLANT

# FUGITIVE PARTICULATE MATTER EMISSIONS CONTROL PLAN

**F003-30070-03281**

**E & B PAVING, INC.**
**ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN**

1. Fugitive particulate matter (dust) emissions from interior roads and parking lots shall be controlled by one or more of the following measures:
   - A. Paving with asphalt.
   - B. Treating with emulsified asphalt on an as needed basis.
   - C. Treating with calcium chloride on an as needed basis.
   - D. Treating with water on an as needed basis.

2. Fugitive particulate matter (dust) emissions from aggregate stockpiles shall be controlled by one or more of the following measures:
   - A. Clean and maintain stockpile areas.
   - B. Treating around the stockpile areas with water on an as needed basis.
   - C. Treating the stockpiles with water on an as needed basis.

3. Fugitive particulate matter (dust) emissions from conveying of aggregates shall be controlled by treating with water on an as needed basis.

4. Fugitive particulate matter (dust) emissions from the transferring of aggregates shall be controlled by one of the following measures:
   - A. Locate stockpiles as close as possible to feed bins.
   - B. Limit transfer points to three foot drops or less.
   - C. Apply water on an as needed basis.

5. Fugitive particulate matter (dust) emissions from transporting of aggregates shall be controlled by one of the following measures:
   - A. Tarping the aggregate hauling vehicles.
   - B. Ensure tailgates are tight and do not leak.
   - C. Maintain a 10 MPH speed limit on site.

6. Fugitive particulate matter (dust) emissions from the loading and unloading of aggregates shall be controlled by one or more of the following measures:
   - A. Limit free fall distance.
   - B. Limit the rate of discharge of the aggregate.
   - C. Apply water on an as needed basis.

7. Material Handling Operations

   The size of the aggregate stockpiles will vary. Materials delivered to the plant site will be kept reasonably balanced with plant production. The actual drying and mixing of the aggregate mixture is done inside the asphalt plant. Emissions are controlled, at this point, by plant dust control systems.

8. Fugitive particulate matter (dust) emissions from material handling operations such as crushing, grinding, screening, and mixing shall be controlled by one or more the following measures:
   - (1) Limit free fall distance.
   - (2) Limit the rate of discharge of the materials.

(3) Apply water on an as needed basis.

9. Plan Implementation

A. The effective date of this plan was December 13, 1996.

B. Date of most recent update: August 25, 2011.

*DEFINITIONS:*

An “as-needed basis” means the frequency or quantity of application necessary to minimize visible particulate matter emissions.

***Reference***

The Indiana Administrative Code, Title 326 Air Pollution Control Board, Article 6. Particulate Rules, weblink: http://www.in.gov/legislative/iac/T03260/A00060.PDF? . See page 12 for Rule 5. Fugitive Particulate Matter Emission Limitations.

**FEDERALLY ENFORCEABLE**
**STATE OPERATING PERMIT RENEWAL**

**OFFICE OF AIR QUALITY**

**E & B Paving, Inc.**
**7320 Lower Huntington Road,**
**Ft. Wayne, Indiana 46809**

**Attachment B**

**Title 40: Protection of Environment**

PART 60—NEW SOURCE PERFORMANCE STANDARDS

**SUBPART I - STANDARDS OF PERFORMANCE**
**FOR HOT MIX ASPHALT FACILITIES**

**F003-30070-03281**

## 40 CFR 60, SUBPART I — STANDARDS OF PERFORMANCE FOR HOT MIX ASPHALT FACILITIES

### § 60.90 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

*[42 FR 37936, July 25, 1977, as amended at 51 FR 12325, Apr. 10, 1986]*

### § 60.91 Definitions.

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

(a) *Hot mix asphalt facility* means any facility, as described in §60.90, used to manufacture hot mix asphalt by heating and drying and mixing with asphalt cements.

*[51 FR 12325, Apr. 10, 1986]*

### § 60.92 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(1) Contain particulate matter in excess of 90 mg/dscm (four hundredths (0.04) gr/dscf).

(2) Exhibit 20 percent opacity, or greater.

*[39 FR 9314, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]*

### § 60.93 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 appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.92 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in §60.11 shall be used to determine opacity.

*[54 FR 6667, Feb. 14, 1989]*

**Reference**

The US EPA Electronic Code of Federal Regulations - 40 CFR 60, Subpart I: Standards of Performance for Hot Mix Asphalt Facilities weblink:
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=875648a88dd2168ac2096fe26e3e4c98&rgn=div6&view=text&node=40:6.0.1.1.1.20&idno=40

**FEDERALLY ENFORCEABLE**
**STATE OPERATING PERMIT RENEWAL**

**OFFICE OF AIR QUALITY**

**E & B Paving, Inc.**
**7320 Lower Huntington Road,**
**Ft. Wayne, Indiana 46809**

**Attachment C**

**Title 40: Protection of Environment**

PART 60—NEW SOURCE PERFORMANCE STANDARDS

**Subpart OOO - STANDARDS OF PERFORMANCE**
**FOR NONMETALLIC MINERAL PROCESSING PLANTS**

**F003-30070-03281**

## 40 CFR 60, Subpart OOO—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 ±250 pascals ±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 ±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 expediently 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 H2O (0.05 in. H2O)] 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.

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

Where:

Ve= average building vent velocity (feet per minute);

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

Ae= 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—Exceptions to Applicability of Subpart A to Subpart OOO**

**Table 1 to Subpart OOO—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. |

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

**Table 2 to Subpart OOO—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)[a] | 7 percent for dry control devices[b] | An initial performance test according to §60.8 of this part and §60.675 of this subpart; and<br>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)[a] | Not applicable (except for individual enclosed storage bins)<br>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<br>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). |

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

[b]The stack opacity limit and associated opacity testing requirements do not apply for affected facilities using wet scrubbers.

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**Table 3 to Subpart OOO—Fugitive Emission Limits**

**Table 3 to Subpart OOO—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. |

***Reference:***
The US EPA Electronic Code of Federal Regulations - 40 CFR 60, Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants weblink:
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=43918166a5e8fa1b77b615cd0efc6c39&rgn=div6&view=text&node=40:6.0.1.1.1.80&idno=40

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**Attachment D**

**Title 40: Protection of Environment**

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

**Subpart CCCCCC - NESHAPs for Source Category: Gasoline Dispensing Facilities**

**F003-30070-03281**

**Subpart CCCCCC—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities**

**Source:** 73 FR 1945, Jan. 10, 2008, unless otherwise noted.

**What This Subpart Covers**

**§ 63.11110 What is the purpose of this subpart?**

This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF). This subpart also establishes requirements to demonstrate compliance with the emission limitations and management practices.

**§ 63.11111 Am I subject to the requirements in this subpart?**

(a) The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank.

(b) If your GDF has a monthly throughput of less than 10,000 gallons of gasoline, you must comply with the requirements in §63.11116.

(c) If your GDF has a monthly throughput of 10,000 gallons of gasoline or more, you must comply with the requirements in §63.11117.

(d) If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in §63.11118.

(e) An affected source shall, upon request by the Administrator, demonstrate that their monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable. For new or reconstructed affected sources, as specified in §63.11112(b) and (c), recordkeeping to document monthly throughput must begin upon startup of the affected source. For existing sources, as specified in §63.11112(d), recordkeeping to document monthly throughput must begin on January 10, 2008. For existing sources that are subject to this subpart only because they load gasoline into fuel tanks other than those in motor vehicles, as defined in §63.11132, recordkeeping to document monthly throughput must begin on January 24, 2011. Records required under this paragraph shall be kept for a period of 5 years.

(f) If you are an owner or operator of affected sources, as defined in paragraph (a) of this section, you are not required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 as a result of being subject to this subpart. However, you must still apply for and obtain a permit under 40 CFR part 70 or 40 CFR part 71 if you meet one or more of the applicability criteria found in 40 CFR 70.3(a) and (b) or 40 CFR 71.3(a) and (b).

(g) The loading of aviation gasoline into storage tanks at airports, and the subsequent transfer of aviation gasoline within the airport, is not subject to this subpart.

(h) Monthly throughput is the total volume of gasoline loaded into, or dispensed from, all the gasoline storage tanks located at a single affected GDF. If an area source has two or more GDF at separate locations within the area source, each GDF is treated as a separate affected source.

(i) If your affected source's throughput ever exceeds an applicable throughput threshold, the affected source will remain subject to the requirements for sources above the threshold, even if the affected source throughput later falls below the applicable throughput threshold.

(j) The dispensing of gasoline from a fixed gasoline storage tank at a GDF into a portable gasoline tank for the on-site delivery and subsequent dispensing of the gasoline into the fuel tank of a motor vehicle or other gasoline-fueled engine or equipment used within the area source is only subject to §63.11116 of this subpart.

(k) For any affected source subject to the provisions of this subpart and another Federal rule, you may elect to comply only with the more stringent provisions of the applicable subparts. You must consider all provisions of the rules, including monitoring, recordkeeping, and reporting. You must identify the affected source and provisions with which you will comply in your Notification of Compliance Status required under §63.11124. You also must demonstrate in your Notification of Compliance Status that each provision with which you will comply is at least as stringent as the otherwise applicable requirements in this subpart. You are responsible for making accurate determinations concerning the more stringent provisions, and noncompliance with this rule is not excused if it is later determined that your determination was in error, and, as a result, you are violating this subpart. Compliance with this rule is your responsibility and the Notification of Compliance Status does not alter or affect that responsibility.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4181, Jan. 24, 2011]

**§ 63.11112 What parts of my affected source does this subpart cover?**

(a) The emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF that meet the criteria specified in §63.11111. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.

(b) An affected source is a new affected source if you commenced construction on the affected source after November 9, 2006, and you meet the applicability criteria in §63.11111 at the time you commenced operation.

(c) An affected source is reconstructed if you meet the criteria for reconstruction as defined in §63.2.

(d) An affected source is an existing affected source if it is not new or reconstructed.

**§ 63.11113 When do I have to comply with this subpart?**

(a) If you have a new or reconstructed affected source, you must comply with this subpart according to paragraphs (a)(1) and (2) of this section, except as specified in paragraph (d) of this section.

(1) If you start up your affected source before January 10, 2008, you must comply with the standards in this subpart no later than January 10, 2008.

(2) If you start up your affected source after January 10, 2008, you must comply with the standards in this subpart upon startup of your affected source.

(b) If you have an existing affected source, you must comply with the standards in this subpart no later than January 10, 2011.

(c) If you have an existing affected source that becomes subject to the control requirements in this subpart because of an increase in the monthly throughput, as specified in §63.11111(c) or §63.11111(d), you must comply with the standards in this subpart no later than 3 years after the affected source becomes subject to the control requirements in this subpart.

(d) If you have a new or reconstructed affected source and you are complying with Table 1 to this subpart, you must comply according to paragraphs (d)(1) and (2) of this section.

(1) If you start up your affected source from November 9, 2006 to September 23, 2008, you must comply no later than September 23, 2008.

(2) If you start up your affected source after September 23, 2008, you must comply upon startup of your affected source.

(e) The initial compliance demonstration test required under §63.11120(a)(1) and (2) must be conducted as specified in paragraphs (e)(1) and (2) of this section.

(1) If you have a new or reconstructed affected source, you must conduct the initial compliance test upon installation of the complete vapor balance system.

(2) If you have an existing affected source, you must conduct the initial compliance test as specified in paragraphs (e)(2)(i) or (e)(2)(ii) of this section.

(i) For vapor balance systems installed on or before December 15, 2009, you must test no later than 180 days after the applicable compliance date specified in paragraphs (b) or (c) of this section.

(ii) For vapor balance systems installed after December 15, 2009, you must test upon installation of the complete vapor balance system.

(f) If your GDF is subject to the control requirements in this subpart only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in §63.11132, you must comply with the standards in this subpart as specified in paragraphs (f)(1) or (f)(2) of this section.

(1) If your GDF is an existing facility, you must comply by January 24, 2014.

(2) If your GDF is a new or reconstructed facility, you must comply by the dates specified in paragraphs (f)(2)(i) and (ii) of this section.

(i) If you start up your GDF after December 15, 2009, but before January 24, 2011, you must comply no later than January 24, 2011.

(ii) If you start up your GDF after January 24, 2011, you must comply upon startup of your GDF.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008; 76 FR 4181, Jan. 24, 2011]

**Emission Limitations and Management Practices**

**§ 63.11115 What are my general duties to minimize emissions?**

Each owner or operator of an affected source under this subpart must comply with the requirements of paragraphs (a) and (b) of this section.

(a) You must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(b) You must keep applicable records and submit reports as specified in §63.11125(d) and §63.11126(b).

[76 FR 4182, Jan. 24, 2011]

**§ 63.11116 Requirements for facilities with monthly throughput of less than 10,000 gallons of gasoline.**

(a) You must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

(3) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;

(4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

(b) You are not required to submit notifications or reports as specified in §63.11125, §63.11126, or subpart A of this part, but you must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

(c) You must comply with the requirements of this subpart by the applicable dates specified in §63.11113.

(d) Portable gasoline containers that meet the requirements of 40 CFR part 59, subpart F, are considered acceptable for compliance with paragraph (a)(3) of this section.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4182, Jan. 24, 2011]

**§ 63.11117 Requirements for facilities with monthly throughput of 10,000 gallons of gasoline or more.**

(a) You must comply with the requirements in section §63.11116(a).

(b) Except as specified in paragraph (c) of this section, you must only load gasoline into storage tanks at your facility by utilizing submerged filling, as defined in §63.11132, and as specified in paragraphs (b)(1), (b)(2), or (b)(3) of this section. The applicable distances in paragraphs (b)(1) and (2) shall be measured from the point in the opening of the submerged fill pipe that is the greatest distance from the bottom of the storage tank.

(1) Submerged fill pipes installed on or before November 9, 2006, must be no more than 12 inches from the bottom of the tank.

(2) Submerged fill pipes installed after November 9, 2006, must be no more than 6 inches from the bottom of the tank.

(3) Submerged fill pipes not meeting the specifications of paragraphs (b)(1) or (b)(2) of this section are allowed if the owner or operator can demonstrate that the liquid level in the tank is always above the entire opening of the fill pipe. Documentation providing such demonstration must be made available for inspection by the Administrator's delegated representative during the course of a site visit.

(c) Gasoline storage tanks with a capacity of less than 250 gallons are not required to comply with the submerged fill requirements in paragraph (b) of this section, but must comply only with all of the requirements in §63.11116.

(d) You must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

(e) You must submit the applicable notifications as required under §63.11124(a).

(f) You must comply with the requirements of this subpart by the applicable dates contained in §63.11113.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008; 76 FR 4182, Jan. 24, 2011]

**§ 63.11118 Requirements for facilities with monthly throughput of 100,000 gallons of gasoline or more.**

(a) You must comply with the requirements in §§63.11116(a) and 63.11117(b).

(b) Except as provided in paragraph (c) of this section, you must meet the requirements in either paragraph (b)(1) or paragraph (b)(2) of this section.

(1) Each management practice in Table 1 to this subpart that applies to your GDF.

(2) If, prior to January 10, 2008, you satisfy the requirements in both paragraphs (b)(2)(i) and (ii) of this section, you will be deemed in compliance with this subsection.

(i) You operate a vapor balance system at your GDF that meets the requirements of either paragraph (b)(2)(i)(A) or paragraph (b)(2)(i)(B) of this section.

(A) Achieves emissions reduction of at least 90 percent.

(B) Operates using management practices at least as stringent as those in Table 1 to this subpart.

(ii) Your gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains requirements of either paragraph (b)(2)(i)(A) or paragraph (b)(2)(i)(B) of this section.

(c) The emission sources listed in paragraphs (c)(1) through (3) of this section are not required to comply with the control requirements in paragraph (b) of this section, but must comply with the requirements in §63.11117.

(1) Gasoline storage tanks with a capacity of less than 250 gallons that are constructed after January 10, 2008.

(2) Gasoline storage tanks with a capacity of less than 2,000 gallons that were constructed before January 10, 2008.

(3) Gasoline storage tanks equipped with floating roofs, or the equivalent.

(d) Cargo tanks unloading at GDF must comply with the management practices in Table 2 to this subpart.

(e) You must comply with the applicable testing requirements contained in §63.11120.

(f) You must submit the applicable notifications as required under §63.11124.

(g) You must keep records and submit reports as specified in §§63.11125 and 63.11126.

(h) You must comply with the requirements of this subpart by the applicable dates contained in §63.11113.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008]

**Testing and Monitoring Requirements**

**§ 63.11120 What testing and monitoring requirements must I meet?**

(a) Each owner or operator, at the time of installation, as specified in §63.11113(e), of a vapor balance system required under §63.11118(b)(1), and every 3 years thereafter, must comply with the requirements in paragraphs (a)(1) and (2) of this section.

(1) You must demonstrate compliance with the leak rate and cracking pressure requirements, specified in item 1(g) of Table 1 to this subpart, for pressure-vacuum vent valves installed on your gasoline storage tanks using the test methods identified in paragraph (a)(1)(i) or paragraph (a)(1)(ii) of this section.

(i) California Air Resources Board Vapor Recovery Test Procedure TP–201.1E,—Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, adopted October 8, 2003 (incorporated by reference, see §63.14).

(ii) Use alternative test methods and procedures in accordance with the alternative test method requirements in §63.7(f).

(2) You must demonstrate compliance with the static pressure performance requirement specified in item 1(h) of Table 1 to this subpart for your vapor balance system by conducting a static pressure test on your gasoline storage tanks using the test methods identified in paragraphs (a)(2)(i), (a)(2)(ii), or (a)(2)(iii) of this section.

(i) California Air Resources Board Vapor Recovery Test Procedure TP–201.3,—Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, adopted April 12, 1996, and amended March 17, 1999 (incorporated by reference, see §63.14).

(ii) Use alternative test methods and procedures in accordance with the alternative test method requirements in §63.7(f).

(iii) Bay Area Air Quality Management District Source Test Procedure ST–30—Static Pressure Integrity Test—Underground Storage Tanks, adopted November 30, 1983, and amended December 21, 1994 (incorporated by reference, *see* §63.14).

(b) Each owner or operator choosing, under the provisions of §63.6(g), to use a vapor balance system other than that described in Table 1 to this subpart must demonstrate to the Administrator or delegated authority under paragraph §63.11131(a) of this subpart, the equivalency of their vapor balance system to that described in Table 1 to this subpart using the procedures specified in paragraphs (b)(1) through (3) of this section.

(1) You must demonstrate initial compliance by conducting an initial performance test on the vapor balance system to demonstrate that the vapor balance system achieves 95 percent reduction using the California Air Resources Board Vapor Recovery Test Procedure TP–201.1,—Volumetric Efficiency for Phase I Vapor Recovery Systems, adopted April 12, 1996, and amended February 1, 2001, and October 8, 2003, (incorporated by reference, see §63.14).

(2) You must, during the initial performance test required under paragraph (b)(1) of this section, determine and document alternative acceptable values for the leak rate and cracking pressure requirements specified in item 1(g) of Table 1 to this subpart and for the static pressure performance requirement in item 1(h) of Table 1 to this subpart.

(3) You must comply with the testing requirements specified in paragraph (a) of this section.

(c) Conduct of performance tests. Performance tests conducted for this subpart shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance ( *i.e.,* performance based on normal operating conditions) of the affected source. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(d) Owners and operators of gasoline cargo tanks subject to the provisions of Table 2 to this subpart must conduct annual certification testing according to the vapor tightness testing requirements found in §63.11092(f).

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4182, Jan. 24, 2011]

**Notifications, Records, and Reports**

**§ 63.11124 What notifications must I submit and when?**

(a) Each owner or operator subject to the control requirements in §63.11117 must comply with paragraphs (a)(1) through (3) of this section.

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in §63.11117, unless you meet the requirements in paragraph (a)(3) of this section. If your affected source is subject to the control requirements in §63.11117 only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in §63.11132, you must submit the Initial Notification by May 24, 2011. The Initial Notification must contain the information specified in paragraphs (a)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in §63.13.

(i) The name and address of the owner and the operator.

(ii) The address (i.e., physical location) of the GDF.

(iii) A statement that the notification is being submitted in response to this subpart and identifying the requirements in paragraphs (a) through (c) of §63.11117 that apply to you.

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in §63.13, within 60 days of the applicable compliance date specified in §63.11113, unless you meet the requirements in paragraph (a)(3) of this section. The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy, must indicate whether the source has complied with the requirements of this subpart, and must indicate whether the facilities' monthly throughput is calculated based on the volume of gasoline loaded into all storage tanks or on the volume of gasoline dispensed from all storage tanks. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (a)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (a)(1) of this section.

(3) If, prior to January 10, 2008, you are operating in compliance with an enforceable State, local, or tribal rule or permit that requires submerged fill as specified in §63.11117(b), you are not required to submit an Initial Notification or a Notification of Compliance Status under paragraph (a)(1) or paragraph (a)(2) of this section.

(b) Each owner or operator subject to the control requirements in §63.11118 must comply with paragraphs (b)(1) through (5) of this section.

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in §63.11118. If your affected source is subject to the control requirements in §63.11118 only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in §63.11132, you must submit the Initial Notification by May 24, 2011. The Initial Notification must contain the information specified in paragraphs (b)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in §63.13.

(i) The name and address of the owner and the operator.

(ii) The address (i.e., physical location) of the GDF.

(iii) A statement that the notification is being submitted in response to this subpart and identifying the requirements in paragraphs (a) through (c) of §63.11118 that apply to you.

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in §63.13, in accordance with the schedule specified in §63.9(h). The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy, must indicate whether the source has complied with the requirements of this subpart, and must indicate whether the facility's throughput is determined based on the volume of gasoline loaded into all storage tanks or on the volume of gasoline dispensed from all storage tanks. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (b)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (b)(1) of this section.

(3) If, prior to January 10, 2008, you satisfy the requirements in both paragraphs (b)(3)(i) and (ii) of this section, you are not required to submit an Initial Notification or a Notification of Compliance Status under paragraph (b)(1) or paragraph (b)(2) of this subsection.

(i) You operate a vapor balance system at your gasoline dispensing facility that meets the requirements of either paragraphs (b)(3)(i)(A) or (b)(3)(i)(B) of this section.

(A) Achieves emissions reduction of at least 90 percent.

(B) Operates using management practices at least as stringent as those in Table 1 to this subpart.

(ii) Your gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains requirements of either paragraphs (b)(3)(i)(A) or (b)(3)(i)(B) of this section.

(4) You must submit a Notification of Performance Test, as specified in §63.9(e), prior to initiating testing required by §63.11120(a) and (b).

(5) You must submit additional notifications specified in §63.9, as applicable.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008; 76 FR 4182, Jan. 24, 2011]

**§ 63.11125 What are my recordkeeping requirements?**

(a) Each owner or operator subject to the management practices in §63.11118 must keep records of all tests performed under §63.11120(a) and (b).

(b) Records required under paragraph (a) of this section shall be kept for a period of 5 years and shall be made available for inspection by the Administrator's delegated representatives during the course of a site visit.

(c) Each owner or operator of a gasoline cargo tank subject to the management practices in Table 2 to this subpart must keep records documenting vapor tightness testing for a period of 5 years. Documentation must include each of the items specified in §63.11094(b)(2)(i) through (viii). Records

of vapor tightness testing must be retained as specified in either paragraph (c)(1) or paragraph (c)(2) of this section.

(1) The owner or operator must keep all vapor tightness testing records with the cargo tank.

(2) As an alternative to keeping all records with the cargo tank, the owner or operator may comply with the requirements of paragraphs (c)(2)(i) and (ii) of this section.

(i) The owner or operator may keep records of only the most recent vapor tightness test with the cargo tank, and keep records for the previous 4 years at their office or another central location.

(ii) Vapor tightness testing records that are kept at a location other than with the cargo tank must be instantly available ( *e.g.,* via e-mail or facsimile) to the Administrator's delegated representative during the course of a site visit or within a mutually agreeable time frame. Such records must be an exact duplicate image of the original paper copy record with certifying signatures.

(d) Each owner or operator of an affected source under this subpart shall keep records as specified in paragraphs (d)(1) and (2) of this section.

(1) Records of the occurrence and duration of each malfunction of operation ( *i.e.,* process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.11115(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4183, Jan. 24, 2011]

**§ 63.11126 What are my reporting requirements?**

(a) Each owner or operator subject to the management practices in §63.11118 shall report to the Administrator the results of all volumetric efficiency tests required under §63.11120(b). Reports submitted under this paragraph must be submitted within 180 days of the completion of the performance testing.

(b) Each owner or operator of an affected source under this subpart shall report, by March 15 of each year, the number, duration, and a brief description of each type of malfunction which occurred during the previous calendar year and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.11115(a), including actions taken to correct a malfunction. No report is necessary for a calendar year in which no malfunctions occurred.

[76 FR 4183, Jan. 24, 2011]

**Other Requirements and Information**

**§ 63.11130 What parts of the General Provisions apply to me?**

Table 3 to this subpart shows which parts of the General Provisions apply to you.

**§ 63.11131 Who implements and enforces this subpart?**

(a) This subpart can be implemented and enforced by the U.S. EPA or a delegated authority such as the applicable State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or tribal agency.

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

(c) The authorities that cannot be delegated to State, local, or tribal agencies are as specified in paragraphs (c)(1) through (3) of this section.

(1) Approval of alternatives to the requirements in §§63.11116 through 63.11118 and 63.11120.

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

(3) Approval of major alternatives to recordkeeping and reporting under §63.10(f), as defined in §63.90, and as required in this subpart.

**§ 63.11132 What definitions apply to this subpart?**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA), or in subparts A and BBBBBB of this part. For purposes of this subpart, definitions in this section supersede definitions in other parts or subparts.

*Dual-point vapor balance system* means a type of vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.

*Gasoline* means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater, which is used as a fuel for internal combustion engines.

*Gasoline cargo tank* means a delivery tank truck or railcar which is loading or unloading gasoline, or which has loaded or unloaded gasoline on the immediately previous load.

*Gasoline dispensing facility (GDF)* means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment.

*Monthly throughput* means the total volume of gasoline that is loaded into, or dispensed from, all gasoline storage tanks at each GDF during a month. Monthly throughput is calculated by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the current day, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the previous 364 days, and then dividing that sum by 12.

*Motor vehicle* means any self-propelled vehicle designed for transporting persons or property on a street or highway.

*Nonroad engine* means an internal combustion engine (including the fuel system) that is not used in a motor vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under section 7411 of this title or section 7521 of this title.

*Nonroad vehicle* means a vehicle that is powered by a nonroad engine, and that is not a motor vehicle or a vehicle used solely for competition.

*Submerged filling* means, for the purposes of this subpart, the filling of a gasoline storage tank through a submerged fill pipe whose discharge is no more than the applicable distance specified in §63.11117(b) from the bottom of the tank. Bottom filling of gasoline storage tanks is included in this definition.

*Vapor balance system* means a combination of pipes and hoses that create a closed system between the vapor spaces of an unloading gasoline cargo tank and a receiving storage tank such that vapors displaced from the storage tank are transferred to the gasoline cargo tank being unloaded.

*Vapor-tight* means equipment that allows no loss of vapors. Compliance with vapor-tight requirements can be determined by checking to ensure that the concentration at a potential leak source is not equal to or greater than 100 percent of the Lower Explosive Limit when measured with a combustible gas detector, calibrated with propane, at a distance of 1 inch from the source.

*Vapor-tight gasoline cargo tank* means a gasoline cargo tank which has demonstrated within the 12 preceding months that it meets the annual certification test requirements in §63.11092(f) of this part.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4183, Jan. 24, 2011]

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**Table 1 to Subpart CCCCCC of Part 63—Applicability Criteria and Management Practices for Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More[1]**

| If you own or operate | Then you must |
|---|---|
| 1. A new, reconstructed, or existing GDF subject to §63.11118 | Install and operate a vapor balance system on your gasoline storage tanks that meets the design criteria in paragraphs (a) through (h). |
| | (a) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnect. |
| | (b) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor-tight, as defined in §63.11132. |
| | (c) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18 inches water pressure or 5.9 inches water vacuum during product transfer. |
| | (d) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations. |
| | (e) If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends the same distance from the bottom of the storage tank as specified in §63.11117(b). |
| | (f) Liquid fill connections for all systems shall be equipped with vapor-tight caps. |
| | (g) Pressure/vacuum (PV) vent valves shall be installed on the storage tank vent pipes. The pressure specifications for PV vent valves shall be: a positive pressure setting of 2.5 to 6.0 inches of water and a negative pressure setting of 6.0 to 10.0 inches of water. The total leak rate of all PV vent valves at an affected facility, including connections, shall not exceed 0.17 cubic foot per hour at a pressure of 2.0 inches of water and 0.63 cubic foot per hour at a vacuum of 4 inches of water. |
| | (h) The vapor balance system shall be capable of meeting the static pressure performance requirement of the following equation: |
| | $Pf = 2e^{-500.887/v}$ |
| | Where: |
| | Pf = Minimum allowable final pressure, inches of water. |

| If you own or operate | Then you must |
|---|---|
| | v = Total ullage affected by the test, gallons. |
| | e = Dimensionless constant equal to approximately 2.718. |
| | 2 = The initial pressure, inches water. |
| 2. A new or reconstructed GDF, or any storage tank(s) constructed after November 9, 2006, at an existing affected facility subject to §63.11118 | Equip your gasoline storage tanks with a dual-point vapor balance system, as defined in §63.11132, and comply with the requirements of item 1 in this Table. |

[1]The management practices specified in this Table are not applicable if you are complying with the requirements in §63.11118(b)(2), except that if you are complying with the requirements in §63.11118(b)(2)(i)(B), you must operate using management practices at least as stringent as those listed in this Table.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008; 76 FR 4184, Jan. 24, 2011]

**Table 2 to Subpart CCCCCC of Part 63—Applicability Criteria and Management Practices for Gasoline Cargo Tanks Unloading at Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More**

| If you own or operate | Then you must |
|---|---|
| A gasoline cargo tank | Not unload gasoline into a storage tank at a GDF subject to the control requirements in this subpart unless the following conditions are met: |
| | (i) All hoses in the vapor balance system are properly connected, |
| | (ii) The adapters or couplers that attach to the vapor line on the storage tank have closures that seal upon disconnect, |
| | (iii) All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor-tight, |
| | (iv) All tank truck vapor return equipment is compatible in size and forms a vapor-tight connection with the vapor balance equipment on the GDF storage tank, and |
| | (v) All hatches on the tank truck are closed and securely fastened. |
| | (vi) The filling of storage tanks at GDF shall be limited to unloading from vapor-tight gasoline cargo tanks. Documentation that the cargo tank has met the specifications of EPA Method 27 shall be carried with the cargo tank, as specified in §63.11125(c). |

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4184, Jan. 24, 2011]

**Table 3 to Subpart CCCCCC of Part 63—Applicability of General Provisions**

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| §63.1 | Applicability | Initial applicability determination; applicability after standard established; permit requirements; extensions, notifications | Yes, specific requirements given in §63.11111. |
| §63.1(c)(2) | Title V Permit | Requirements for obtaining a title V permit from the applicable permitting authority | Yes, §63.11111(f) of subpart CCCCCC exempts identified area sources from the obligation to obtain title V operating permits. |
| §63.2 | Definitions | Definitions for part 63 standards | Yes, additional definitions in §63.11132. |
| §63.3 | Units and Abbreviations | Units and abbreviations for part 63 standards | Yes. |
| §63.4 | Prohibited Activities and Circumvention | Prohibited activities; Circumvention, severability | Yes. |
| §63.5 | Construction/Reconstruction | Applicability; applications; approvals | Yes, except that these notifications are not required for facilities subject to §63.11116. |
| §63.6(a) | Compliance with Standards/Operation & Maintenance—Applicability | General Provisions apply unless compliance extension; General Provisions apply to area sources that become major | Yes. |
| §63.6(b)(1)–(4) | Compliance Dates for New and Reconstructed Sources | Standards apply at effective date; 3 years after effective date; upon startup; 10 years after | Yes. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| | | construction or reconstruction commences for CAA section 112(f) | |
| §63.6(b)(5) | Notification | Must notify if commenced construction or reconstruction after proposal | Yes. |
| §63.6(b)(6) | [Reserved] | | |
| §63.6(b)(7) | Compliance Dates for New and Reconstructed Area Sources That Become Major | Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were an area source | No. |
| §63.6(c)(1)–(2) | Compliance Dates for Existing Sources | Comply according to date in this subpart, which must be no later than 3 years after effective date; for CAA section 112(f) standards, comply within 90 days of effective date unless compliance extension | No, §63.11113 specifies the compliance dates. |
| §63.6(c)(3)–(4) | [Reserved] | | |
| §63.6(c)(5) | Compliance Dates for Existing Area Sources That Become Major | Area sources That become major must comply with major source standards by date indicated in this subpart or by equivalent time period (e.g., 3 years) | No. |
| §63.6(d) | [Reserved] | | |
| 63.6(e)(1)(i) | General duty to minimize emissions | Operate to minimize emissions at all times; information Administrator will use to determine if operation and maintenance requirements were met. | No. *See* §63.11115 for general duty requirement. |
| 63.6(e)(1)(ii) | Requirement to correct malfunctions ASAP | Owner or operator must correct malfunctions as soon as possible. | No. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| §63.6(e)(2) | [Reserved] | | |
| §63.6(e)(3) | Startup, Shutdown, and Malfunction (SSM) Plan | Requirement for SSM plan; content of SSM plan; actions during SSM | No. |
| §63.6(f)(1) | Compliance Except During SSM | You must comply with emission standards at all times except during SSM | No. |
| §63.6(f)(2)–(3) | Methods for Determining Compliance | Compliance based on performance test, operation and maintenance plans, records, inspection | Yes. |
| §63.6(g)(1)–(3) | Alternative Standard | Procedures for getting an alternative standard | Yes. |
| §63.6(h)(1) | Compliance with Opacity/Visible Emission (VE) Standards | You must comply with opacity/VE standards at all times except during SSM | No. |
| §63.6(h)(2)(i) | Determining Compliance with Opacity/VE Standards | If standard does not State test method, use EPA Method 9 for opacity in appendix A of part 60 of this chapter and EPA Method 22 for VE in appendix A of part 60 of this chapter | No. |
| §63.6(h)(2)(ii) | [Reserved] | | |
| §63.6(h)(2)(iii) | Using Previous Tests To Demonstrate Compliance With Opacity/VE Standards | Criteria for when previous opacity/VE testing can be used to show compliance with this subpart | No. |
| §63.6(h)(3) | [Reserved] | | |
| §63.6(h)(4) | Notification of Opacity/VE Observation Date | Must notify Administrator of anticipated date of observation | No. |
| §63.6(h)(5)(i), (iii)–(v) | Conducting Opacity/VE Observations | Dates and schedule for conducting opacity/VE observations | No. |
| §63.6(h)(5)(ii) | Opacity Test Duration and Averaging Times | Must have at least 3 hours of observation with 30 6-minute averages | No. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| §63.6(h)(6) | Records of Conditions During Opacity/VE Observations | Must keep records available and allow Administrator to inspect | No. |
| §63.6(h)(7)(i) | Report Continuous Opacity Monitoring System (COMS) Monitoring Data From Performance Test | Must submit COMS data with other performance test data | No. |
| §63.6(h)(7)(ii) | Using COMS Instead of EPA Method 9 | Can submit COMS data instead of EPA Method 9 results even if rule requires EPA Method 9 in appendix A of part 60 of this chapter, but must notify Administrator before performance test | No. |
| §63.6(h)(7)(iii) | Averaging Time for COMS During Performance Test | To determine compliance, must reduce COMS data to 6-minute averages | No. |
| §63.6(h)(7)(iv) | COMS Requirements | Owner/operator must demonstrate that COMS performance evaluations are conducted according to §63.8(e); COMS are properly maintained and operated according to §63.8(c) and data quality as §63.8(d) | No. |
| §63.6(h)(7)(v) | Determining Compliance with Opacity/VE Standards | COMS is probable but not conclusive evidence of compliance with opacity standard, even if EPA Method 9 observation shows otherwise. Requirements for COMS to be probable evidence-proper maintenance, meeting Performance Specification 1 in appendix B of part 60 of this chapter, and data have not been altered | No. |
| §63.6(h)(8) | Determining Compliance with Opacity/VE Standards | Administrator will use all COMS, EPA Method 9 (in | No. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| | | appendix A of part 60 of this chapter), and EPA Method 22 (in appendix A of part 60 of this chapter) results, as well as information about operation and maintenance to determine compliance | |
| §63.6(h)(9) | Adjusted Opacity Standard | Procedures for Administrator to adjust an opacity standard | No. |
| §63.6(i)(1)–(14) | Compliance Extension | Procedures and criteria for Administrator to grant compliance extension | Yes. |
| §63.6(j) | Presidential Compliance Exemption | President may exempt any source from requirement to comply with this subpart | Yes. |
| §63.7(a)(2) | Performance Test Dates | Dates for conducting initial performance testing; must conduct 180 days after compliance date | Yes. |
| §63.7(a)(3) | CAA Section 114 Authority | Administrator may require a performance test under CAA section 114 at any time | Yes. |
| §63.7(b)(1) | Notification of Performance Test | Must notify Administrator 60 days before the test | Yes. |
| §63.7(b)(2) | Notification of Re-scheduling | If have to reschedule performance test, must notify Administrator of rescheduled date as soon as practicable and without delay | Yes. |
| §63.7(c) | Quality Assurance (QA)/Test Plan | Requirement to submit site-specific test plan 60 days before the test or on date Administrator agrees with; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing | Yes. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| §63.7(d) | Testing Facilities | Requirements for testing facilities | Yes. |
| 63.7(e)(1) | Conditions for Conducting Performance Tests | Performance test must be conducted under representative conditions | No, §63.11120(c) specifies conditions for conducting performance tests. |
| §63.7(e)(2) | Conditions for Conducting Performance Tests | Must conduct according to this subpart and EPA test methods unless Administrator approves alternative | Yes. |
| §63.7(e)(3) | Test Run Duration | Must have three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used | Yes. |
| §63.7(f) | Alternative Test Method | Procedures by which Administrator can grant approval to use an intermediate or major change, or alternative to a test method | Yes. |
| §63.7(g) | Performance Test Data Analysis | Must include raw data in performance test report; must submit performance test data 60 days after end of test with the Notification of Compliance Status; keep data for 5 years | Yes. |
| §63.7(h) | Waiver of Tests | Procedures for Administrator to waive performance test | Yes. |
| §63.8(a)(1) | Applicability of Monitoring Requirements | Subject to all monitoring requirements in standard | Yes. |
| §63.8(a)(2) | Performance Specifications | Performance Specifications in appendix B of 40 CFR part 60 apply | Yes. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| §63.8(a)(3) | [Reserved] | | |
| §63.8(a)(4) | Monitoring of Flares | Monitoring requirements for flares in §63.11 apply | Yes. |
| §63.8(b)(1) | Monitoring | Must conduct monitoring according to standard unless Administrator approves alternative | Yes. |
| §63.8(b)(2)–(3) | Multiple Effluents and Multiple Monitoring Systems | Specific requirements for installing monitoring systems; must install on each affected source or after combined with another affected source before it is released to the atmosphere provided the monitoring is sufficient to demonstrate compliance with the standard; if more than one monitoring system on an emission point, must report all monitoring system results, unless one monitoring system is a backup | No. |
| §63.8(c)(1) | Monitoring System Operation and Maintenance | Maintain monitoring system in a manner consistent with good air pollution control practices | No. |
| §63.8(c)(1)(i)–(iii) | Operation and Maintenance of Continuous Monitoring Systems (CMS) | Must maintain and operate each CMS as specified in §63.6(e)(1); must keep parts for routine repairs readily available; must develop a written SSM plan for CMS, as specified in §63.6(e)(3) | No. |
| §63.8(c)(2)–(8) | CMS Requirements | Must install to get representative emission or parameter measurements; must verify operational status before or at performance test | No. |
| §63.8(d) | CMS Quality Control | Requirements for CMS quality control, including calibration, etc.; must keep quality control | No. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| | | plan on record for 5 years; keep old versions for 5 years after revisions | |
| §63.8(e) | CMS Performance Evaluation | Notification, performance evaluation test plan, reports | No. |
| §63.8(f)(1)–(5) | Alternative Monitoring Method | Procedures for Administrator to approve alternative monitoring | No. |
| §63.8(f)(6) | Alternative to Relative Accuracy Test | Procedures for Administrator to approve alternative relative accuracy tests for continuous emissions monitoring system (CEMS) | No. |
| §63.8(g) | Data Reduction | COMS 6-minute averages calculated over at least 36 evenly spaced data points; CEMS 1 hour averages computed over at least 4 equally spaced data points; data that cannot be used in average | No. |
| §63.9(a) | Notification Requirements | Applicability and State delegation | Yes. |
| §63.9(b)(1)–(2), (4)–(5) | Initial Notifications | Submit notification within 120 days after effective date; notification of intent to construct/reconstruct, notification of commencement of construction/reconstruction, notification of startup; contents of each | Yes. |
| §63.9(c) | Request for Compliance Extension | Can request if cannot comply by date or if installed best available control technology or lowest achievable emission rate | Yes. |
| §63.9(d) | Notification of Special Compliance Requirements for New Sources | For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date | Yes. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| §63.9(e) | Notification of Performance Test | Notify Administrator 60 days prior | Yes. |
| §63.9(f) | Notification of VE/Opacity Test | Notify Administrator 30 days prior | No. |
| §63.9(g) | Additional Notifications when Using CMS | Notification of performance evaluation; notification about use of COMS data; notification that exceeded criterion for relative accuracy alternative | Yes, however, there are no opacity standards. |
| §63.9(h)(1)–(6) | Notification of Compliance Status | Contents due 60 days after end of performance test or other compliance demonstration, except for opacity/VE, which are due 30 days after; when to submit to Federal vs. State authority | Yes, however, there are no opacity standards. |
| §63.9(i) | Adjustment of Submittal Deadlines | Procedures for Administrator to approve change when notifications must be submitted | Yes. |
| §63.9(j) | Change in Previous Information | Must submit within 15 days after the change | Yes. |
| §63.10(a) | Recordkeeping/Reporting | Applies to all, unless compliance extension; when to submit to Federal vs. State authority; procedures for owners of more than one source | Yes. |
| §63.10(b)(1) | Recordkeeping/Reporting | General requirements; keep all records readily available; keep for 5 years | Yes. |
| §63.10(b)(2)(i) | Records related to SSM | Recordkeeping of occurrence and duration of startups and shutdowns | No. |
| §63.10(b)(2)(ii) | Records related to SSM | Recordkeeping of malfunctions | No. *See* §63.11125(d) for recordkeeping of (1) |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| | | | occurrence and duration and (2) actions taken during malfunction. |
| §63.10(b)(2)(iii) | Maintenance records | Recordkeeping of maintenance on air pollution control and monitoring equipment | Yes. |
| §63.10(b)(2)(iv) | Records Related to SSM | Actions taken to minimize emissions during SSM | No. |
| §63.10(b)(2)(v) | Records Related to SSM | Actions taken to minimize emissions during SSM | No. |
| §63.10(b)(2)(vi)–(xi) | CMS Records | Malfunctions, inoperative, out-of-control periods | No. |
| §63.10(b)(2)(xii) | Records | Records when under waiver | Yes. |
| §63.10(b)(2)(xiii) | Records | Records when using alternative to relative accuracy test | Yes. |
| §63.10(b)(2)(xiv) | Records | All documentation supporting Initial Notification and Notification of Compliance Status | Yes. |
| §63.10(b)(3) | Records | Applicability determinations | Yes. |
| §63.10(c) | Records | Additional records for CMS | No. |
| §63.10(d)(1) | General Reporting Requirements | Requirement to report | Yes. |
| §63.10(d)(2) | Report of Performance Test Results | When to submit to Federal or State authority | Yes. |
| §63.10(d)(3) | Reporting Opacity or VE Observations | What to report and when | No. |
| §63.10(d)(4) | Progress Reports | Must submit progress reports on schedule if under compliance extension | Yes. |
| §63.10(d)(5) | SSM Reports | Contents and submission | No. *See* §63.11126(b) for malfunction |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| | | | reporting requirements. |
| §63.10(e)(1)–(2) | Additional CMS Reports | Must report results for each CEMS on a unit; written copy of CMS performance evaluation; two-three copies of COMS performance evaluation | No. |
| §63.10(e)(3)(i)–(iii) | Reports | Schedule for reporting excess emissions | No. |
| §63.10(e)(3)(iv)–(v) | Excess Emissions Reports | Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§63.8(c)(7)–(8) and 63.10(c)(5)–(13) | No. |
| §63.10(e)(3)(iv)–(v) | Excess Emissions Reports | Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a | No, §63.11130(K) specifies excess emission events for this subpart. |

| Citation | Subject | Brief description | Applies to subpart CCCCCC |
|---|---|---|---|
| | | statement that there have been no deviations; must submit report containing all of the information in §§63.8(c)(7)–(8) and 63.10(c)(5)–(13) | |
| §63.10(e)(3)(vi)–(viii) | Excess Emissions Report and Summary Report | Requirements for reporting excess emissions for CMS; requires all of the information in §§63.10(c)(5)–(13) and 63.8(c)(7)–(8) | No. |
| §63.10(e)(4) | Reporting COMS Data | Must submit COMS data with performance test data | No. |
| §63.10(f) | Waiver for Recordkeeping/Reporting | Procedures for Administrator to waive | Yes. |
| §63.11(b) | Flares | Requirements for flares | No. |
| §63.12 | Delegation | State authority to enforce standards | Yes. |
| §63.13 | Addresses | Addresses where reports, notifications, and requests are sent | Yes. |
| §63.14 | Incorporations by Reference | Test methods incorporated by reference | Yes. |
| §63.15 | Availability of Information | Public and confidential information | Yes. |

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4184, Jan. 24, 2011]

***Resources***

EPA Gasoline Dispensing Facilities (GDF) Brochure, weblink: http://www.epa.gov/ttn/atw/area/gdfb.pdf

EPA Summary of Regulations Controlling Air Emissions from Gasoline Dispensing Facilities (GDF) Fact Sheet
http://www.epa.gov/ttn/atw/area/gdfb.pdf

***Reference***

The US EPA Electronic Code of Federal Regulations - 40 CFR 63, Subpart CCCCCC National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities weblink:
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=ec747058ccd5763d83153eaa83fe7220&rgn=div6&view=text&node=40:14.0.1.1.1.15&idno=40

# Indiana Department of Environmental Management
# Office of Air Quality

## Addendum to the Technical Support Document (ATSD) for a General Asphalt Federally Enforceable State Operating Permit (FESOP) Transitioning to a FESOP Renewal

### Source Background and Description

| | |
|---|---|
| **Source Name:** | E & B Paving, Inc. |
| **Source Location:** | 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809 |
| **County:** | Allen |
| **SIC Code:** | 2951 (Asphalt Paving Mixtures and Blocks) |
| **Permit Renewal No.:** | F003-30070-03281 |
| **Permit Reviewer:** | Hannah L. Desrosiers |

On August 26, 2011, the Office of Air Quality (OAQ) had a notice published in the Fort Wayne Journal Gazette, Fort Wayne, Indiana, stating that E & B Paving, Inc. had applied for a renewal of their General Asphalt FESOP issued on January 20, 2006. The notice also stated that since IDEM, OAQ is no longer issuing the General Asphalt FESOP permits until the permit model can be updated to coincide with current environmental standards and regulations, the OAQ proposed to issue a Federally Enforceable State Operating Permit (FESOP) Renewal for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

### Comments and Responses

On September 12, 2011, Steve Henderson, Regulatory Affairs Director, at E & B Paving, Inc. submitted comments to IDEM, OAQ on the draft FESOP Renewal.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

**Comment 1:**

Please revise the fugitive dust plan (FDP), to incorporate the changes submitted on August 25, 2011 for the Woodburn Plant permit (#F003-30187-03279), addressing E & B Paving, Inc.'s recycled asphalt pavement (RAP) crushing activities.

**Response to Comment 1:**

IDEM has reviewed the revised FDP and agrees with the recommended changes, since it replaces sample fugitive particulate control measures for the RAP crushing activities with source specific control measures. The fugitive dust plan, Attachment A to the permit, has been revised as follows:

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8. Fugitive particulate matter (dust) emissions from material handling operations such as crushing, grinding, screening, and mixing shall be controlled by one or more the following measures:

   **(1) Limit free fall distance.**

   **(2) Limit the rate of discharge of the materials.**

   **(3) Apply water on an as needed basis.**

~~(1) wet suppression.~~

~~(2) enclosure of emission source with venting of emissions to a fabric filter.~~

~~A copy of the (manufacturers) specification for the particulate matter collection system equipment (i.e. fabric filter, wet suppression system) used as a fugitive particulate matter emission control measure shall be appended to the Fugitive Dust Control Plan.~~

9. Plan Implementation

A. The effective date of this plan was December 13, 1996.

B. Date of most recent update: August **25**~~17~~, 2011.

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**Comment 2:**

Please correct the slag limitation in the FESOP Quarterly Report, Page 47 of 51 of the permit. Under Fuel & Slag Limits, the limitation is listed in the table as "*Blast Furnace and Steel Slag, Combined (tons)*". The limit should read "*Blast Furnace (tons)*".

**Response to Comment 2:**

IDEM agrees with the recommended changes, since the unlimited potential to emit SO2 from Steel slag is only 0.90 tons per year (see TSD Appendix A.1, page 6 of 19), a Steel slag usage limit is not required for the source to comply with their FESOP SO2 Limit. To form a conservative estimate, SO2 emissions are calculated based on the "worst case" assumption that steel slag usage corresponds to 100% of the aggregate used to produce the hot-mix asphalt (see TSD Appendix A.2, page 6 of 19).

Therefore, the permit has been revised as follows:

| Fuel Type (Units) | Fuel Usage Limit (per 12 consecutive month period) |
|---|---|
| ****** | |
| Blast Furnace ~~and Steel~~ Slag~~, combined~~ (tons) | 67,500 |
| ****** | |

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No other public comments were received during the public comment period for this permit action.

**Additional Changes**

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

1. The itemized list lettering of the emission units listed in Condition A.2: Emission Units and Pollution Control Equipment Summary, Condition D.1: Emissions Unit Operation Conditions, Condition D.2: Emissions Unit Operation Conditions, and Condition E.2: NSPS Requirements, pages 6, 24, 36, and 41 of 51 of the permit, has been corrected as follows:

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:

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(**c**~~b~~) One (1) #2 diesel fuel-fired portable crusher for processing reclaimed asphalt pavement (RAP), identified as SV-3, constructed in 2010, with a maximum throughput capacity of 300 tons of RAP per hour.

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

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

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SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

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(**c**~~b~~) One (1) #2 diesel fuel-fired portable crusher for processing reclaimed asphalt pavement (RAP), identified as SV-3, constructed in 2010, with a maximum throughput capacity of 300 tons of RAP per hour.

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SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

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

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SECTION E.2 NSPS REQUIREMENTS

Emissions Unit Description: Recycled Asphalt Pavement (RAP) Crushing Operation

(**c**~~b~~) One (1) #2 diesel fuel-fired portable crusher for processing reclaimed asphalt pavement (RAP), identified as SV-3, constructed in 2010, with a maximum throughput capacity of 300 tons of RAP per hour.

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2. The itemized list numbering of the second limit listed in Condition D.1.1: PSD Minor Limit, page 25 of 51 of the permit, has been corrected as follows:

D.1.1 PSD Minor Limit [326 IAC 2-2]]

In order to render 326 IAC 2-2 not applicable;

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(**b**~~2~~) PM emissions from the dryer/mixer shall not exceed 0.246 pounds per ton of asphalt processed.

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3. Paragraph (1) of Condition D.1.10(a) Sulfur Dioxide (SO2) Emissions and Sulfur Content for Fuel Oil, page 29 of 51 of the permit, has been deleted because it is potentially confusing, unnecessarily repeating the limit from condition D.1.6 while omitting the limits from Condition D.1.3(a)(1) through (3), and does not add value to the permit. Therefore, the permit has been revised as follows:

D.1.10 Sulfur Dioxide ($SO_2$) Emissions and Sulfur Content

*Fuel Oil*

(a) Compliance with the fuel limitations established in Conditions D.1.3(a)(1) through D.1.3(a)(3), and D.1.6, shall be determined utilizing one of the following options.

Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), compliance shall be demonstrated on a thirty (30) day calendar-month average.

~~(1) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million British thermal units heat input when combusting No. 2 fuel oil, or one and six tenths (1.6) pounds per million British thermal units heat input when combusting either refinery blend / residual (No. 4, No. 5, and No. 6) fuel oil or waste oil, by:~~

(**1**~~A~~) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or

(**2**~~B~~) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.

(**A**~~i~~) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and

(**B**~~ii~~) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.

(**3**~~2~~) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

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4. The Federal Rule providing authority for the testing requirement contained in Condition E.2.3: Testing Requirements, page 41 of 51 of the permit, has been corrected as follows:

E.2.3 Testing Requirements [40 CFR Part 60, Subpart **OOO** ~~I~~] [326 IAC 12-1] [326 IAC 2-8-5(a)(1),(4)][326 IAC 2-1.1-11]

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5. The RAP crusher, owned by E & B Paving, Inc., is a portable unit that will be relocated from plant to plant on an as-needed basis. IDEM has determined that since in the past EPA has allowed the same portable crusher to be tested at one location and then moved to another site, that testing need only be performed at one of E & B Paving, Inc.'s sites, and that this would provide an adequate indication of compliance since they will be crushing a very similar product at each of their different locations. Therefore, Condition E.2.3: Testing Requirements, page 41 of 51 of the permit, has been revised as follows:

E.2.3 Testing Requirements [40 CFR Part 60, Subpart OOO] [326 IAC 12-1] [326 IAC 2-8-5(a)(1),(4)][326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition E.2.2, the Permittee shall perform testing for fugitive emissions from affected facilities without water sprays, as required under NSPS 40 CFR 60, Subpart OOO, not later than five (5) years from the most recent valid compliance demonstration, utilizing methods approved by the Commissioner. **Testing shall only be performed if the company has not previously performed testing for the same crusher at one of their other Indiana facilities.** This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

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No other changes have been made to the permit.

## 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) 234-5374 or toll free at 1-800-451-6027 extension 4-5374.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

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

# Technical Support Document (TSD) for a General Asphalt Federally Enforceable State Operating Permit (FESOP) Transitioning to a FESOP Renewal

## Source Background and Description

| | |
|---|---|
| **Source Name:** | E & B Paving, Inc. |
| **Source Location:** | 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809 |
| **County:** | Allen |
| **SIC Code:** | 2951 (Asphalt Paving Mixtures and Blocks) |
| **Permit Renewal No.:** | F003-30070-03281 |
| **Permit Reviewer:** | Hannah L. Desrosiers |

The Office of Air Quality (OAQ) has reviewed an operating permit renewal application from E & B Paving, Inc. relating to the continued operation of an existing stationary drum hot-mix asphalt plant, and cold-mix asphalt production operation.

## History

On December 29, 2010, E & B Paving, Inc. submitted an application to the OAQ requesting to renew its General Asphalt FESOP operating permit. IDEM, OAQ is no longer issuing General Asphalt FESOP permits until the standard permit language can be updated to coincide with current environmental standards and regulations. Therefore, E & B Paving, Inc. will be issued a Federally Enforceable State Operating Permit (FESOP) Renewal.

E & B Paving, Inc. has confirmed that they want the flexibility to process blast furnace slag, steel slag, and recycled asphalt shingles (asbestos-free post consumer waste and/or factory seconds) in their aggregate mix, and that they do not perform any grinding of any kind of recycled asphalt shingles (RAS), asbestos-free or otherwise. Additionally, E & B Paving, Inc. has requested the flexibility to crush recycled asphalt pavement (RAP) on-site; and finally, E & B Paving, Inc. has indicated that they want the flexibility to co-locate a portable hot-mix asphalt plant at this same site with the existing stationary hot-mix asphalt plant.

E & B Paving, Inc. was issued a General Asphalt FESOP (No.: F003-22450-03281), on January 20, 2006.

## Source Definition

E & B Paving, Inc. (source ID 003-03281) operates its hot-mix asphalt pavement plant in the same quarry as the Hanson Aggregates Midwest, Inc. plant (source ID 003-00024). The Hanson plant supplies crushed aggregate to the E & B asphalt plant. Stoneco, Inc. (source ID 003-05203) operates a crushing plant in the quarry. A concrete batch plant owned by Irving Ready Mix, Inc. (source ID 003-01505) also operates at this location. IDEM, OAQ has examined whether the E & B Paving plant is part of the same major source with any of the other plants. The term “major source” is defined at 326 IAC 2-7-1(22). In order for two or more plants to be considered one major source, they must meet all three of the following criteria:

(1) the plants must be under common ownership or common control;

(2) the plants must have the same two-digit Standard Industrial Classification (SIC) Code or one must serve as a support facility for the other; and,

(3) the plants must be located on contiguous or adjacent properties.

E & B Paving, Inc. is a wholly owned subsidiary of Irving Materials, Inc. It shares no common owners or board of directors with the other plants; therefore, none of the plants have a common owner with E & B Paving.

IDEM's Nonrule Policy Document Air-005 sets out two independent tests to determine if common control exists. The first test, the auxiliary activity test, determines whether one source performs an auxiliary activity which directly serves the purpose of the primary activity and whether the owner or operator of the primary activity has a major role in the day-to-day operations of the auxiliary activity. An auxiliary activity directly serves the purpose of a primary activity by supplying a necessary raw material to the primary activity or performing an integral part of the production process for the primary activity.

Day-to-day control of the auxiliary activity by the primary activity may be evidenced by several factors, including:

- is a majority of the output of the auxiliary activity provided to the primary activity?
- can the auxiliary activity contract to provide it products/services to a third-party without the consent of the primary activity?
- can the primary activity assume control of the auxiliary activity under certain circumstances?
- is the auxiliary activity required to complete periodic reports to the primary activity?

If one or a combination of these questions is answered affirmatively, common control may exist.

The Stoneco plant and the Irving Ready Mix plant do not supply any raw material or perform any process for the E & B plant. The E & B plant does not supply any raw material or perform any process for any other plant. Therefore the Stoneco plant, the Irving Ready Mix plant and the E & B plant have no auxiliary relationship, so these three plants do not meet the first common control test.

The Hanson Aggregates plant does perform an auxiliary activity for the E & B plant by supplying the aggregate used to make asphalt pavement. Hanson Aggregates supplies less than 10% of its output to the E & B plant. E & B and Hanson Aggregates are free to enter into contracts with any other company. Neither has the power to assume control of the other under any circumstances. Neither is required to submit any reports to the other. IDEM finds that neither plant has a major role in the day to day operation of the other plant. Therefore the first common control test is not met for the E & B plant and the Hanson Aggregates plant.

The second common control test in the nonrule policy is the but/for test. This test focuses on whether the auxiliary activity would exist absent the needs of the primary activity. If all or a majority of the output of the auxiliary activity is consumed by the primary activity the but/for test is satisfied. None of the plants supplies all or a majority of its output to the E & B plant and the E & B plant provides nothing to the other three plants. If the Hanson Aggregates plant were to shut down, the E & B plant could obtain aggregate from another source. If the E & B plant were to shut down, the aggregates plant would still have more than 90% of its current customers and could continue operating.

Therefore, the second common control test is also not met. IDEM finds that none of the plants are under common control. Since neither common ownership nor common control exists for any of the plants, the first part of the definition of major source is not met.

The SIC Code Manual of 1987 sets out how to determine the proper SIC Code for each type of business. More information about SIC Codes is available at http://www.osha.gov/pls/imis/sic_manual.html on the Internet. The Hanson Aggregates plant and the Stoneco plant have the two-digit SIC Code 14 for the Major Group Mining and Quarrying of Nonmetallic Minerals, Except Fuels. The asphalt plant has the two-digit SIC Code 29 for the Major Group Petroleum Refining and Related Industries. The concrete batch plant has the two-digit SIC Code 32 for the Major Group Stone, Clay, Glass and Concrete Products. Therefore, the E & B plant does not have the same two-digit SIC code as any of the other plants.

A plant is a support facility to another plant if it dedicates 50% or more of its output to the other plant. The aggregates plant sends less than 10% of its annual output to the E & B plant. The E & B plant does not send any of its asphalt pavement production to any of the other plants. Therefore, the E & B plant does not meet the second part of the major source definition with any of the other plants.

The plants are located on the same property, so the third part of the definition is met for all the plants. However, since none of the plants meet all three parts of the major source definition with the E & B plant, IDEM, OAQ has determined that the E & B asphalt plant is not part of the same major source with any of the other plants.

## Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

(a) One (1) hot-mix asphalt drum dryer/mixer, identified as EU-01, constructed in 2004, with a maximum throughput capacity of 350 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) 100 million British thermal units (MMBtu) per hour natural gas fired dryer burner, using #2 distillate fuel oil, refinery blend fuel oil, residual fuel oil, and waste oil as backup fuels, equipped with one (1) baghouse for particulate control and exhausting through one (1) stack, identified as stack SV-1. This source produces cold mix asphalt. No grinding of shingles occurs at this source.

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

(1) Three (3) asphalt mix storage silos;

(2) Raw material storage piles, including:

(i) Aggregate storage pile(s), total capacity 50,000 tons;

(ii) Reclaimed asphalt pavement (RAP) storage pile(s), total capacity 20,000 tons;

(iii) Blast Furnace and/or Steel Slag storage pile(s), total capacity 10,000 tons; and

(iv) Recycled asphalt shingles pile(s), total capacity 3,000 tons.

(3) Seven (7) feed bins, including:

(i) Six (6) cold feed bins for coarse to fine aggregate; and

(ii) One (1) feed bin for recycled asphalt pavement and recycled shingles.

(4) Five (5) conveyors, including:

(i) Three (3) conveyors for transporting coarse to fine aggregates to the drum mixer;

(ii) One (1) conveyor for transporting recycled asphalt pavement and recycled shingles to the drum mixer; and

(iii) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum hot-mix asphalt operation is considered an affected facility.

(b) One (1) #2 diesel fuel-fired portable crusher for processing reclaimed asphalt pavement (RAP), identified as SV-3, constructed in 2010, with a maximum throughput capacity of 300 tons of RAP per hour.

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

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

**Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit**

No unpermitted emission units were discovered operating at this existing source during this review process.

**Emission Units and Pollution Control Equipment Removed From the Source**

No emission units have been removed from this existing source during this review process.

**Insignificant Activities**

The source also consists of the following insignificant activities:

(a) One (1) 1.3 million British Thermal Units per hour (MMBtu/hr) natural gas-fired hot oil heater, identified as SV-2, constructed in 1996, and exhausting to stack SV-2; [326 IAC 6-2]

(b) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such as filling of tanks, locomotives, automobiles, having storage capacity less than or equal to ten thousand five hundred (10,500) gallons;

Under 40 CFR 60, Subpart CCCCCC, the units comprising this operation are considered affected facilities.

(c) Five (5) storage tanks, exhausting at stacks SV-3, SV-4, SV-5, SV-6, and SV-7, including:

(1) Three (3) liquid asphalt cement storage tanks, identified as Tank-01, Tank-02, and Tank-03, constructed in 2004, each with a maximum storage capacity of 30,000 gallons;

(2) One (1) fuel oil storage tank, identified as Tank-04, constructed in 2004, with a maximum storage capacity of 20,000 gallons; and

(3) One (1) emulsion tack storage tank, identified as Tank-05, constructed in 2004, with a maximum storage capacity of 12,000 gallons.

(d) Combustion source flame safety purging on startup;

(e) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu/hr;

(f) 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;

(g) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

(h) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;

(i) 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;

(j) Closed loop heating and cooling systems;

(k) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(l) A materials laboratory as defined in 326 IAC 2-7-1(21)(D); and

(m) Paved and unpaved roads and parking lots with public access. [326 IAC 6-5]

## Existing Approvals

The source has been operating under General Asphalt FESOP No.: F003-22450-03281, issued on January 20, 2006.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

## Enforcement Issue

In accordance with 326 IAC 2-8-3(h), a timely renewal application is one that is submitted at least nine (9) months (or one hundred twenty (120) calendar days) prior to the expiration date of the source's existing operating permit. This source's existing permit expired on January 20, 2011. The source's permit renewal application was not received by IDEM until December 29, 2010. IDEM is reviewing this matter and will take appropriate action.

## Emission Calculations

See Appendices A.1 and A.2 of this TSD for detailed emission calculations.

## County Attainment Status

The source is located in Allen County. The following attainment status designations are applicable to Allen County:

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| Pollutant | Designation |
|---|---|
| $SO_2$ | Better than national standards. |
| CO | Unclassifiable or attainment effective November 15, 1990. |
| $O_3$ | Attainment effective February 12, 2007, for the Fort Wayne area, including Allen County, for the 8-hour ozone standard.[1] |
| $PM_{10}$ | Unclassifiable effective November 15, 1990. |
| PM2.5 | Unclassifiable or attainment effective April 5, 2005. |
| $NO_2$ | Cannot be classified or better than national standards. |
| Pb | Not designated. |
| [1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. | |

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides ($NO_x$) 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 $NO_x$ emissions are considered when evaluating the rule applicability relating to ozone. Allen County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and $NO_x$ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$

Allen County has been classified as attainment for $PM_{2.5}$. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and $SO_2$ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

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

## Fugitive Emissions

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, therefore fugitive emissions, from the affected facilities to which the New Source Performance Standard is applicable, are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

## Portable Source

This source did not relocate during the permit term. Therefore, this source is now considered a stationary source. The source ID will remain 003-03281 to ensure the history of the source is maintained in IDEM's tracking systems.

## Unrestricted Potential Emissions

The following table reflects the unrestricted potential emissions of the source.

| Pollutant | tons/year |
|---|---|
| PM | 43,075.43 |
| PM10[(1)] | 10,014.60 |
| PM2.5 | 2,326.69 |
| SO2 | 810.26 |
| NOx | 188.18 |
| VOC | 36,925.05 |
| CO | 212.92 |
| GHG's as $CO_2e$ | 80,480.15 |
| Total HAPs [(2)] | 9,656.51 |
| Maximum (Worst Case) HAP | 3,316.18 (xylene) |

**NOTES**

(1) 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".

(2) HAPs include 2,2,4-trimethylpentane, 2-butanone (aka MEK), 2-methylnaphthalene, acrolein, benzene, bis(2-ethylhexyl)phthalate, cumene, ethylbenzene, formaldehyde, HCl, hexane, methyl chloroform, phenol, phenanthrene, polycyclic organic matter, propionaldehyde, quinone, toluene, total PAH HAPs, xylene, and antimony, arsenic, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium compounds.

(3) Appendices A.1 and A.2, of this TSD, reflect the unrestricted, uncontrolled, potential emissions of the source.

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, PM2.5, SO2, NOx, VOC, and CO are each equal to or greater than 100 tons per year. However, the Permittee has agreed to limit the source's PM10, PM2.5, SO2, NOx, VOC, and CO emissions to less than Title V levels, therefore the Permittee will be issued a FESOP Renewal.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of GHGs is less than one hundred thousand (100,000) tons of $CO_2$ equivalent emissions ($CO_2e$) per year.

(c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. However, the Permittee has agreed to limit the source's single HAP emissions and total HAP emissions below Title V levels. Therefore, the Permittee will be issued a FESOP Renewal.

## Potential to Emit After Issuance

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

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| Process/ Emission Unit | Potential To Emit of the Entire Source after Issuance of Renewal (tons/year) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | $PM_{10}$* | $PM_{2.5}$* | $SO_2$ | $NO_x$ | VOC | CO | GHGs** as $CO_2e$ | Total HAPs | Worst Single HAP |
| **Ducted Emissions** | | | | | | | | | | |
| Dryer Fuel Combustion (worst case) (1) | 13.35 | 10.64 | 10.64 | 30.67 | 46.92 | 1.36 | 20.74 | 29,855.11 | 3.42 | 2.75 (HCL) |
| Dryer/Mixer (2) (Process) | 86.12 | 36.62 | 41.85 | 20.30 | 19.25 | 11.20 | 45.50 | 11,638.20 | 3.73 | 1.09 (formaldehyde) |
| Dryer/Mixer Slag Processing (3) | 0 | 0 | 0 | 18.23 | 0 | 0 | 0 | 0 | 0 | N/A |
| Hot Oil Heater Fuel Combustion (worst case) | 0.01 | 0.04 | 0.04 | $3.42E^{-03}$ | 0.57 | 0.03 | 0.48 | 688.38 | 0.011 | 0.010 (hexane) |
| Crusher Fuel Combustion | 0.11 | 0.11 | 0.11 | 0.10 | 1.51 | 0.12 | 0.33 | 56.37 | $1.33E^{-03}$ | $4.04E^{-04}$ (formaldehyde) |
| **Worst Case Emissions*** | **86.24** | **36.77** | **42.00** | **49.00** | **49.00** | **11.35** | **46.30** | **30,599.86** | **3.74** | **2.75 (HCL)** |
| **Fugitive Emissions** | | | | | | | | | | |
| Asphalt Load-Out and On-Site Yard (3) | 0.39 | 0.39 | 0.39 | 0 | 0 | 6.00 | 1.01 | 0 | 0.10 | 0.03 (formaldehyde) |
| Material Storage Piles | 5.78 | 2.02 | 2.02 | 0 | 0 | 0 | 0 | 0 | 0 | N/A |
| Material Processing and Handling (3) | 2.26 | 1.07 | 0.16 | 0 | 0 | 0 | 0 | 0 | 0 | N/A |
| Material Screening, and Conveying (3) | 11.11 | 4.06 | 4.06 | 0 | 0 | 0 | 0 | 0 | 0 | N/A |
| Unpaved and Paved Roads (worst case) (1) | 18.84 | 4.80 | 0.48 | 0 | 0 | 0 | 0 | 0 | 0 | N/A |
| Cold Mix Asphalt Production (4) | 0 | 0 | 0 | 0 | 0 | 31.11 | 0 | 0 | 8.12 | 2.80 (xylenes) |
| Gasoline Fuel Transfer and Dispensing | 0 | 0 | 0 | 0 | 0 | 0.74 | 0 | 0 | 0.19 | 0.07 (xylenes) |
| Volatile Organic Liquid Storage Vessels *** | 0 | 0 | 0 | 0 | 0 | negl. | 0 | 0 | negl. | negl. |
| **Total Fugitive Emissions** | **38.37** | **12.34** | **7.11** | **0** | **0** | **37.84** | **1.01** | **0** | **8.41** | **2.87 (xylenes)** |
| **Total Limited/ Controlled Emissions (5)** | **124.61** | **49.11** | **49.11** | **49.00** | **49.00** | **49.20** | **47.31** | **30,599.86** | **12.15** | **2.87 (xylenes)** |
| Title V Major Source Thresholds | NA | 100 | 100 | 100 | 100 | 100 | 100 | 100,000 | 25 | 10 |
| PSD Major Source Thresholds | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 100,000 | NA | NA |
| Emission Offset/ Nonattainment NSR Major Source Thresholds | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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". Additionally, US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

** The 100,000 CO2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

*** 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.

(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).

(5) The source has opted to limit source-wide potential to emit PM10, PM2.5, SO2, VOC, and CO, to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

(a) FESOP Status

This existing source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source will be limited to less than the Title V major source threshold

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

(1) Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

(a) The amount of hot-mix asphalt processed shall not exceed 700,000 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 0.105 pounds per ton of asphalt processed.

(c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.120 pounds per ton of asphalt processed.

(d) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

(e) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, VOC and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, 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.

Note: The source has opted to limit source-wide potential to emit PM10, PM2.5, SO2, VOC, and CO, to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

(2) Pursuant to 326 IAC 2-8, the Permittee shall continue to control PM, PM10, and PM2.5 emissions from the unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

(3) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

(A) <u>Fuel and Slag Specifications</u>

(i) The sulfur content of No. 2 fuel oil shall not exceed 0.50% by weight.

(ii) The sulfur content of the refinery blend / residual (No. 4, No. 5, or No. 6) fuel oil shall not exceed 0.75% by weight.

(iii) The sulfur content of the waste fuel oil shall not exceed 1.00% percent by weight.

(iv) The waste oil combusted shall not contain more than 1.00% ash, 0.20% chlorine, and 0.01% lead.

(v) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of waste oil burned.

(vi) The sulfur content of the #2 diesel fuel oil shall not exceed 0.50% by weight.

(vii) The sulfur content of the Blast Furnace slag shall not exceed 1.10% by weight.

(viii) The SO2 emissions from the dryer/mixer shall not exceed 0.540 pounds per ton of Blast Furnace slag processed in the aggregate mix.

(ix) The sulfur content of the Steel slag shall not exceed 0.66% by weight.

(x) The SO2 emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of Steel slag processed in the aggregate mix.

(B) Single Fuel and Slag Usage Limitations:

(i) 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:

($\alpha$) Natural gas usage shall not exceed 494 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month;

($\beta$) No. 2 fuel oil usage shall not exceed 864,007 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

($\chi$) Refinery blend / Residual (No. 4, No. 5, and No. 6) fuel oil usage shall not exceed 520,973 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

($\delta$) Waste oil usage shall not exceed 417,310 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

($\varepsilon$) The Blast Furnace slag usage shall not exceed 67,500 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Note: A Steel slag usage limit is not required for the source to comply with their FESOP SO2 Limit, since unlimited use results in a PTE SO2 of only 0.90 tons/yr (see TSD Appendix A.1, page 6 of 19). To form a conservative estimate, SO2 emissions are based on the "worst case" assumption that steel slag usage corresponds to 100% of the aggregate used to produce the hot-mix asphalt (see TSD Appendix A.2, page 6 of 19).

(ii) When combusting only one type of fuel per twelve (12) consecutive month period in the #2 diesel fuel-fired crusher, the usage of fuel shall be limited as follows:

($\alpha$) Diesel fuel oil usage shall not exceed 5,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

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

(C) Multiple Fuel and Slag Usage Limitation:
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner and #2 diesel fuel-fired crusher, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer and #2 diesel fuel-fired crusher shall be limited as follows:

(i) $SO_2$ emissions from the dryer/mixer shall not exceed 48.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formula:

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

*where*:
S = tons of sulfur dioxide emissions for a 12-month consecutive period
G = million cubic feet of natural gas used in the last 12 months
O = gallons of No. 2 fuel oil used in the last 12 months
R = gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil used in the last 12 months
W = gallons of Waste oil used in the last 12 months
B = tons of Blast Furnace slag used in the last 12 months
T = tons of Steel slag used in the last 12 months

*Emission Factors*
$E_G$ = 0.60 lb/million cubic feet of natural gas
$E_O$ = 71.0 lb/1000 gallons of No. 2 fuel oil
$E_R$ = 78.5 lb/1000 gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil
$E_W$ = 147 lb/1000 gallons of Waste oil
$E_B$ = 0.54 lb/ton of Blast Furnace slag used
$E_T$ = 0.0014 lb/ton of Steel slag used

(ii) Even though the unlimited PTE NOx of #2 diesel fuel-fired crusher combined with the limited PTE NOx of the dryer/mixer burner is less than 100 tons per year, NOx emissions will be limited as follows to allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

NOx emissions from the dryer/mixer and the #2 diesel fuel-fired crusher, combined, shall not exceed 48.43 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formula:

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

*where:*

N = tons of nitrogen oxide emissions for a 12-month consecutive period
G = million cubic feet of natural gas used in the last 12 months
O = gallons of No. 2 fuel oil used in the last 12 months
R = gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil used in the last 12 months
W = gallons of Waste oil used for the last 12 months
D = gallons of #2 diesel fuel oil used in the last 12 months

*Emission Factors*

$E_G$ = 190 lb/million cubic feet of natural gas
$E_O$ = 24.0 lb/1000 gallons of No. 2 fuel oil
$E_R$ = 47.0 lb/1000 gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil
$E_W$ = 19.0 lb/1000 gallons of Waste oil
$E_D$ = 604.17 lb/1000 gallons of #2 diesel fuel oil

(iii) Even though the unlimited PTE CO2e of this source is less than 100,000 tons per year, CO2e emissions will be limited as follows to allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

CO2 equivalent (CO2e) emissions from the dryer/mixer shall not exceed 29,855.11 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formulas:

$$CO_2 = \frac{[G(X_G) + O(X_O) + R(X_R) + W(X_W)]}{2{,}000}$$

$$CH_4 = \frac{[G(X_G) + O(X_O) + R(X_R) + W(X_W)]}{2{,}000}$$

$$N_2O = \frac{[G(X_G) + O(X_O) + R(X_R) + W(X_W)]}{2{,}000}$$

$$CO_2e = \sum[(CO_2 \times CO_2\ GWP) + (CH_4 \times CH_4\ GWP) + (N_2O \times N_2O\ GWP)]$$

*Where:*

$CO_2$ = tons of $CO_2$ emissions for previous 12 consecutive month period;
$CH_4$ = tons of $CH_4$ emissions for previous 12 consecutive month period;
$N_2O$ = tons of $N_2O$ emissions for previous 12 consecutive month period;
$CO_2e$ = tons of $CO_2e$ equivalent emissions for previous 12 consecutive month period;
G = million cubic feet of natural gas used in previous 12 months;
O = gallons of No. 2 fuel oil used in previous 12 months;
R = gallons of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil used in previous 12 months
W = gallons of waste oil used in dryer/mixer in previous 12 months.

*Emission Factors - CO2:*
$X_G$ = 120,161.84 pounds per million cubic feet of natural gas;
$X_O$ = 22,501.41 x $10^{-3}$ pounds per gallon of No. 2 fuel oil;
$X_R$ = 24,835.04 x $10^{-3}$ pounds per gallon of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil; and
$X_W$ = 22,024.15 x $10^{-3}$ pounds per gallon of waste oil;

*Emission Factors - CH4:*
$X_G$ = 2.49 pounds per million cubic feet of natural gas;
$X_O$ = 0.00091 pounds per gallon of No. 2 fuel oil;
$X_R$ = 0.00100 pounds per gallon of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil; and
$X_W$ = 0.00089 pounds per gallon of waste oil;

*Emission Factors - N2O:*
$X_G$ = 2.20 pounds per million cubic feet of natural gas;
$X_O$ = 0.00026 pounds per gallon of No. 2 fuel oil;
$X_R$ = 0.00053 pounds per gallon of Refinery Blend / Residual (No. 4, No. 5 or No. 6) fuel oil; and
$X_W$ = 0.00018 pounds per gallon of waste oil;

*Greenhouse Warming Potentials (GWP)*

| | |
|---|---|
| Carbon dioxide (CO2) | = 1 |
| Methane (CH4) | = 21 |
| Nitrous oxide (N2O) | = 310 |

(D) Asphalt Shingle Usage Limitations:
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 (RAS) 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.

Note: Since the source does not intend to grind shingles at this plant, they will be required to use/purchase only supplier certified asbestos-free post consumer waste and/or factory seconds shingles in their aggregate mix. This requirement will be included, because it is the physical act of grinding that releases asbestos into the air. Therefore, the company performing the grinding would need to test the shingles prior to grinding, in order for the testing to be effective. A new condition limiting the use of asphalt shingles in the aggregate mix to only those that are asbestos-free, has been added to the permit.

Compliance with these limits, combined with the potential to emit SO2, NOx, greenhouse gases, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO2 and NOx to less than 100 tons per twelve (12) consecutive month period, each, greenhouse gases to less than 100,000 tons $CO_2$ equivalent emissions ($CO_2$e) per 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 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.

Note: The source has opted to limit source-wide potential to emit SO2 and NOx to less than 50 tons per twelve (12) consecutive month period, greenhouse gases to less than 50,000 tons $CO_2$ equivalent emissions ($CO_2$e) per twelve (12)

consecutive month period, any single HAP to less than five (5) tons per twelve (12) consecutive month period, and total HAPs to less than twelve and five tenths (12.5) tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

(4) Pursuant to 326 IAC 2-8-4, the VOC emissions from cold-mix (cutback) asphalt production shall be limited as follows:

(A) VOC emissions from the sum of the binders shall not exceed 31.11 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:

(i) 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.

(ii) 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.

(iii) 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.

(iv) 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.

(v) 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 per twelve (12) consecutive month period, the usage of liquid binder shall be limited as follows:

(i) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 32.75 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(ii) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 44.45 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(iii) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 124.45 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(iv) The amount of VOC solvent used in emulsified asphalt shall not exceed 67.05 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(v) The amount of VOC solvent used in all other asphalt shall not exceed 1,244.47 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(D) When using more than one liquid binder per twelve (12) consecutive month period, VOC emissions shall be limited as follows:

(i) The VOC solvent allotments in (C)(i) through (C)(v) 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 VOC emissions from other units at this source, will limit source-wide VOC emissions to less than 100 tons per twelve (12) consecutive month period and render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD), not applicable.

Note: The source has opted to limit source-wide potential to emit VOCs to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

(b) PSD Minor Source

This existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit PM is limited to less than 250 tons per year, the potential to emit all other attainment regulated criteria pollutants are less than 250 tons per year, the potential to emit greenhouse gases (GHGs) is less than the PSD subject to regulation threshold of one hundred thousand (100,000) tons of $CO_2$ equivalent emissions ($CO_2e$) per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

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 700,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) PM emissions from the dryer/mixer shall not exceed 0.246 pounds per ton of asphalt 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.

Note: The source has opted to limit source-wide potential to emit PM to less than 125 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

## Federal Rule Applicability

*New Source Performance Standards (NSPS)*

(a) 40 CFR 60, Subpart I - Standards for Hot-mix Asphalt Facilities

The existing stationary drum hot-mix asphalt plant, constructed in 2003, is still subject to the New Source Performance Standard, 40 CFR 60, Subpart I (326 IAC 12), because it continues to meet the definition of a hot-mix asphalt facility pursuant to the rule and was constructed after June 11, 1973. *This is an existing requirement for this source.*

The units subject to this rule include the following:

(1) Dryers

(2) Systems for screening, handling, storing, and weighing hot aggregate

(3) Systems for loading, transferring, and storing mineral filler

(4) Systems for mixing hot-mix asphalt

(5) The loading, transfer, and storage systems associated with emission control systems

Therefore, pursuant to 40 CFR 60.92(a), particulate matter emissions from the above listed units, shall not exceed four hundredths (0.04) grains per dry standard cubic foot (gr/dscf), and visible emissions shall not exceed twenty percent (20%) opacity.

The source will comply with this rule by using a baghouse to limit particulate matter emissions from the dryer/mixer to less than four hundredths (0.04) gr/dscf, and by applying the management techniques outlined in their Fugitive Dust Plan (included as Attachment A of the permit).

The hot-mix asphalt facility is still subject to the following portions of 40 CFR 60, Subpart I (included as Attachment B of the permit):

(1) 40 CFR 60.90.

(2) 40 CFR 60.91.

(3) 40 CFR 60.92.

(4) 40 CFR 60.93.

*Note: this NSPS includes testing requirements applicable to this source.*

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the hot-mix asphalt facility except when otherwise specified in 40 CFR 60 Subpart I.

(b) 40 CFR 60, Subpart Dc - Standards for Small Industrial/Commercial/Institutional Steam Generating Units

(1) 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 hot-mix asphalt drum dryer/mixer, identified as

EU-01, or the #2 diesel fuel-fired portable crusher, identified as SV-3, because the dryer/mixer burner and #2 diesel fuel-fired portable crusher are each a direct-fired process unit and not a steam generating unit, as defined in 40 CFR 60.41c.

(2) 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 one (1) 1.3 MMBtu/hr hot oil heater, identified as SV-2, because it has a maximum design heat input capacity of less than the applicability threshold of ten (10) MMBtu/hr.

(c) 40 CFR 60, Subpart Kb - Standards for Volatile Organic Liquid Storage Vessels

(1) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the existing storage tanks identified as Tank-01 through Tank-03, because although each tank was constructed in 2004, after the rule applicability date of July 23, 1984, and each tank has a maximum storage capacity greater than seventy-five cubic meters (75 $m^3$) (19,813 gallons) but less than 151 $m^3$ (39,890 gallons), the liquid stored in each tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).

(2) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the existing storage tanks identified as Tank-04 and Tank-05, because although each tank was constructed in 2004, after the rule applicability date of July 23, 1984, the tanks each have a maximum capacity of less than seventy-five cubic meters (75 $m^3$) (19,813 gallons), and the liquid stored in each tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).

Note: The following terms and conditions from previous approvals have been revised in this FESOP Renewal:

The existing storage tanks, identified as Tank-01 through Tank-05, each, are no longer subject to the recordkeeping requirements of 40 CFR 60.116b (a) and (b), through 326 IAC 12, due to revisions to State Rule, 326 IAC 1-1-3 (References to the Code of Federal Regulations).

(d) 40 CFR 60, Subpart UU - Standards for Asphalt Processing and Asphalt Roofing Manufacture

The requirements of the New Source Performance Standard for Asphalt Processing and Asphalt Roofing Manufacture, 40 CFR 60, Subpart UU (2U) (326 IAC 12), are not included in the permit, because the stationary drum hot-mix asphalt plant still does not meet the definition of an asphalt processing plant, since it does not blow asphalt, or an asphalt roofing plant since it does not produce asphalt roofing products, and finally pursuant to §60.101(a) the stationary drum hot-mix asphalt plant is still not a petroleum refinery since it is not engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(e) 40 CFR 60, Subpart OOO - Standards for Nonmetallic Mineral Processing Plants

This existing stationary drum hot-mix asphalt plant is subject to the New Source Performance Standard for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart OOO (3O) (326 IAC 12), whenever the #2 diesel fuel-fired portable crusher is being used to reduce the size of nonmetallic minerals embedded in the Recycled Asphalt Pavement (RAP). *This is a new requirement for this source.*

The units subject to this rule include the following:

(1) crushers;

(2) grinding mills; and

(3) subsequent affected facilities up to, but not including, the first storage silo or bin, such as:

(A) bucket elevators;

(B) belt conveyors;

(C) screening operations; and

(D) bagging operations;

Therefore, pursuant to 40 CFR 60.672(b) and (c), fugitive particulate matter emissions from any transfer point on belt conveyors or from any other of the above-listed facilities, except the crusher, shall not exceed seven percent (7%) opacity, and fugitive particulate matter emissions from the crusher shall not exceed twelve percent (12%) opacity.

The source will comply with this rule by applying the management techniques outlined in their Fugitive Dust Plan (included as Attachment A of the permit).

The crushing operation is therefore subject to the following requirements of 40 CFR 60, Subpart OOO (included as Attachment C of the permit):

(1) 40 CFR 60.670(a), (d), (e), and (f)

(2) 40 CFR 60.671

(3) 40 CFR 60.672(b), (d), and (e)

(4) 40 CFR 60.673

(5) 40 CFR 60.674(b)

(6) 40 CFR 60.675(a), (c)(1)(i), (ii), (iii), (c)(3), (d), (e), (g), and (i)

(7) 40 CFR 60.676(a), (b)(1), (f), (h), (i), (j), and (k)

(8) Table 1 and Table 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 crushing operation except as otherwise specified in 40 CFR 60, Subpart OOO.

(f) <u>40 CFR 60, Subpart UUU - Standards for Calciners and Dryers in Mineral Industries</u>
The requirements of the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR 60, Subpart UUU (3U) (326 IAC 12), are not included in the permit, because the stationary drum hot-mix asphalt plant still does not meet the definition of a mineral processing plant, since it does not process or produce any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

(g) <u>40 CFR 60, Subpart IIII - NSPS for Stationary Compression Ignition Internal Combustion Engines</u>
The requirements of the New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (4I) (326 IAC 12), are not included in the permit, because the #2 diesel fuel-fired portable crusher meets the definition of a nonroad engine, as defined in 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is therefore not considered a stationary internal combustion engine as defined in 40 CFR 60.4219.

(h) <u>40 CFR 60, Subpart JJJJ - NSPS for Stationary Spark Ignition Internal Combustion Engines</u>
The requirements of the New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit, because the #2 diesel fuel-fired portable crusher is compression ignition and meets the definition of a nonroad engine, as defined in 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is therefore not considered a stationary internal combustion engine as defined in 40 CFR 60.4248

(i) There are no other New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR 60) included in the permit.

*National Emission Standards for Hazardous Air Pollutants (NESHAP)*

(a) 40 CFR 63.6580, Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63.6580, Subpart ZZZZ (4Z) (326 IAC 20-84), are not included in the permit, because the #2 diesel fuel-fired portable crusher meets the definition of a nonroad engine, as defined in 40 CFR 1068.30, and is therefore not considered a stationary reciprocating internal combustion engine, as defined in 40 CFR 63.6675.

(b) 40 CFR 63, Subpart DDDDD - NESHAPs for Industrial, Commercial, and Institutional Boilers and Process Heaters
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD (5D) (326 IAC 20), are not included in the permit, as follows:

On June 8, 2007, the United States Court of Appeals for the District of Columbia Circuit (in *National Resource Defense Council, Sierra Club, Environmental Integrity Project vs. EPA*, No. 04-1385), vacated 40 CFR 63, Subpart DDDDD in its entirety. Additionally, since State Rule 326 IAC 20-95 incorporated the requirements of the NESHAP 40 CFR 63, Subpart DDDDD by reference, the requirements of 326 IAC 20-95 are no longer effective. However, since NESHAP 40 CFR Part 63, Subpart DDDDD has been vacated, Section 112(j) of the Clean Air Act, major sources of Hazardous Air Pollutants (HAPs), in specified source categories, requires a case-by-case MACT determination when EPA fails to promulgate a scheduled MACT Standard by the regulatory deadline. E & B Paving, Inc. is still considered an area source under Section 112 of the Clean Air Act, MACT Standards. Therefore, the source is not subject to a case-by-case MACT determination.

(c) 40 CFR 63, Subpart LLLLL - NESHAPs for Asphalt Processing and Asphalt Roofing Manufacturing
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL (5L) (326 IAC 20-71), are not included in the permit, because the stationary drum hot-mix asphalt plant still does not meet the definition of an asphalt processing plant or an asphalt roofing manufacturing facility, since it does not engage in the preparation of asphalt flux or asphalt roofing materials. Additionally, it is not a major source of HAPs, and is not located at nor is it a part of a major source of HAP emissions.

(d) 40 CFR 63, Subpart CCCCCC - NESHAP for the Source Category Identified as Gasoline Dispensing Facilities (GDF)
This source is subject to the National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, 40 CFR 63, Subpart CCCCCC (6C) (326 IAC 20), because the source has a gasoline fuel transfer and dispensing operation, capable of handling less than or equal to 1,300 gallons per day, with a total maximum storage capacity equal to or less than 10,500 gallons. *This is a new requirement for this source.*

The gasoline fuel transfer and dispensing operation is therefore subject to the following portions of Subpart CCCCCC (6C) (included as Attachment D of the permit):

(1) 40 CFR 63.11110;

(2) 40 CFR 63.11111(a), (b), (e), (f);

(3) 40 CFR 63.11112(a), (d);

(4) 40 CFR 63.11113(b), (c);

(5) 40 CFR 63.11116;

(6) 40 CFR 63.11130;

(7) 40 CFR 63.11131;

(8) 40 CFR 63.11132; and

(9) Table 3

*Note: There are no testing requirements applicable to this existing source for this NESHAP.*

The requirements of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart CCCCCC.

(e) 40 CFR 63, Subpart JJJJJJ - NESHAPs for Industrial, Commercial, and Institutional Boilers Area Sources

(1) 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 dryer/mixer burner or #2 diesel fuel-fired portable crusher, because although this existing source is an area source of hazardous air pollutants (HAP), as defined in §63.2, the dryer/mixer burner and #2 diesel fuel-fired portable crusher are each a direct-fired process unit and not a boiler, as define in 40 CFR 63.11237.

(2) 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 1.3 MMBtu/hr natural gas-fired hot oil heater, identified as SV-2, because gas-fired boilers, as defined in 40 CFR 63.11237, are specifically exempted from this rule as indicated in 40 CFR 63.11195(e).

(f) 40 CFR 63, Subpart AAAAAAA - NESHAP for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing

The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart AAAAAAA (7A) (326 IAC 20), are not included in the permit, because although the stationary drum hot-mix asphalt plant is an area source of hazardous air pollutant (HAP) emissions, as defined in §63.2, it does not meet the definition of an asphalt processing operation or an asphalt roofing manufacturing operation, as defined in §63.11566, since it does not engage in the preparation of asphalt flux or asphalt roofing materials.

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

*Compliance Assurance Monitoring (CAM)*

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.

**State Rule Applicability - Entire Source**

(a) 326 IAC 1-6-3 (Preventive Maintenance Plan)

Any person responsible for operating any facility required to obtain a permit under the Federally Enforceable State Operating Permit (FESOP) Program, 326 IAC 2-8, shall prepare and maintain

a preventive maintenance plan in accordance with 326 IAC 1-6-3(a), whenever a control device is required for compliance with any applicable emission limitations and/or air pollution control regulations. The drum drying/mixing process still requires the use of a control device to limit the particulate emissions of PM, PM10 and PM2.5 to less than PSD and TV thresholds. Therefore a PMP is still required for these units and their associated control devices.

(b) 326 IAC 1-7 (Stack Height)
The requirements of 326 IAC 1-7 (Stack Height) are not included in the permit because although the unlimited and uncontrolled PM10 and SO2 emissions from this existing source, are each greater than one hundred (100) tons per year, asphalt concrete plants are still specifically exempted under 326 IAC 1-7-5(c).

(c) 326 IAC 2-1.1-5 (Nonattainment New Source Review)
Allen County is classified as attainment or unclassifiable in Indiana for all regulated NSR pollutants. Therefore, pursuant to 326 IAC 2-1.1-5, the Nonattainment New Source Review requirements do not apply, and are not included in the permit.

(d) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
PSD applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.

(e) 326 IAC 2-3 (Emission Offset)
Allen County is classified as attainment or unclassifiable in Indiana for all regulated NSR pollutants. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) still do not apply, and are not included in the permit.

(f) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit HAPs, from the existing hot-mix and cold-mix asphalt production operations, is still greater than ten (10) tons per year for any single HAP and greater than twenty-five (25) tons per year of a combination of HAPs. However, the source has agreed to continue to limit potential HAPs emissions from these facilities 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, the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) still do not apply, see the "Potential to Emit after Issuance" section above, and are not included in the in the permit.

(g) 326 IAC 2-6 (Emission Reporting)
This source is still not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an operating permit pursuant to 326 IAC 2-7 (Part 70); it is not located in Lake, Porter, or LaPorte County, and its potential to emit lead is less than five (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.

(h) 326 IAC 2-8-4 (FESOP)
FESOP applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.

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

(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.

(j) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
The source is still subject to the requirements of 326 IAC 6-4, because the asphalt load-out, silo filling, and on-site yard, material storage piles, material processing and handling, material crushing, screening, and conveying, and paved and unpaved roads, each, continue to have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the existing 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.

(k) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is still subject to the requirements of 326 IAC 6-5, because the asphalt load-out, silo filling, and on-site yard, material storage piles, material processing and handling, material crushing, screening, and conveying, and paved and unpaved roads were constructed after December 13, 1985, and continue to have potential fugitive particulate emissions greater than twenty-five (25) tons per year. Therefore, pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall continue to be controlled according to the Fugitive Particulate Emissions Control Plan, which is included as Attachment A to the permit.

(l) 326 IAC 6.5 PM Limitations Except Lake County
This source is not subject to 326 IAC 6.5 because it is not located in any one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

(m) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

(n) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

**State Rule Applicability – Individual Facilities**

*Drum Hot-Mix Asphalt Plant*

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The existing dryer burner is still 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 still do not apply, and are not included in the permit.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The existing dryer/mixer is still subject to 40 CFR 60, Subpart I (Standards of Performance for Hot-mix Asphalt Facilities), incorporated by reference through 326 IAC 12. Therefore, pursuant to 326 IAC 6-3-1(c)(5), the existing dryer/mixer is still not subject to the requirements of 326 IAC 6-3 because it is subject to the more stringent particulate limit established in 326 IAC 12.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The existing dryer burner is still subject to 326 IAC 7-1.1 because its potential to emit SO2 is equal to or greater than twenty-five (25) tons/year, or ten (10) pounds/hour, (unlimited potential emissions are 459.90 tons per year). Therefore, pursuant to this rule, sulfur dioxide emissions from the dryer burner shall continue to be limited to:

(A) Five-tenths (0.5) pounds per million Btu heat input for distillate oil combustion.

(B) One and six tenths (1.6) pounds per million Btu heat input for residual oils.

Note: No. 2 fuel oil is considered distillate oil, and refinery blend / residual (No. 4, No. 5, and No. 6) fuel oil, and waste oil are considered residual oils.

(d) 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)
Pursuant to 326 IAC 7-2-1(c), the source shall continue to submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate (pounds SO2 per MMBtu), to the OAQ upon request.

(e) 326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)
The unlimited potential VOC emissions from the existing dryer/mixer are greater than twenty-five (25) tons per year. However, the source has opted to limit the potential VOC emissions from the existing dryer/mixer to less than twenty-five (25) tons per year, therefore, rendering the requirements of 326 IAC 8-1-6 Best Available Control Technology (BACT) not applicable.

In order to render the requirements of 326 IAC 8-1-6 not applicable, the existing dryer/mixer shall be limited as follows:

(1) The hot-mix asphalt production rate shall not exceed 700,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds of VOC per ton of asphalt produced.

Compliance with these limits shall limit the potential VOC emissions from the existing dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 BACT not applicable.

See Appendix A for the detailed calculations.

(f) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)
The existing dryer/mixer is still subject to 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities). Therefore, the requirements of 326 IAC 8-6-1 (Organic Solvent Emission Limitations) still do not apply to the hot-mix asphalt production and are not included in the permit.

(g) There are no other 326 IAC 8 Rules that are applicable to the stationary drum hot-mix asphalt plant.

(h) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
This existing stationary, drum hot-mix asphalt plant is still not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 do not apply and are not included in the permit.

(i) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The existing one (1) 100 MMBtu/hr dryer burner still does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it still has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu/hr); therefore, it is still not subject to this rule and the requirements are not included in the permit.

*Hot Oil Heating System*

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The one (1) existing hot oil heater, having a maximum rated heat input capacity of 1.3 MMBtu/hr, is subject to 326 IAC 6-2-4 because it was constructed after the rule applicability date of September 21, 1983, and meets the definition of an indirect heating unit, as defined in 326 IAC 1-2-19, since it combusts fuel to produce usable heat that is to be transferred through a heat-

conducting materials barrier or by a heat storage medium to a material to be heated so that the material being heated is not contacted by, and adds no substance to the products of combustion.

Pursuant to 326 IAC 6-2-4(a), for a total source maximum operating capacity rating of less than ten (10) MMBtu/hr, the pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input shall not exceed six tenths (0.6) pounds per MMBtu (lb/MMBtu).

Therefore, particulate emissions from the hot oil heater shall continue to not exceed six tenths (0.6) pounds per MMBtu heat input.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The one (1) existing hot oil heater is still not subject to the requirements of 326 IAC 6-3 because it is already otherwise subject to 326 IAC 6-2.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The unlimited potential to emit SO2 from the one (1) existing hot oil heater is still less than twenty-five (25) tons/year, or ten (10) pounds/hour. Therefore, the requirements of 326 IAC 7-1.1 still do not apply and are not included in the permit for this facility.

See Appendix A for the detailed calculations.

(d) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
The one (1) existing hot oil heater is still 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.

(e) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The one (1) existing hot oil heater still does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because the heater still 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) still do not apply and are not included in the permit.

*#2 Diesel Fuel-Fired Portable Crusher*

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The #2 diesel fuel-fired portable crusher is 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 this renewal.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the #2 diesel fuel-fired portable crusher shall not exceed 63.00 pounds per hour when operating at a process weight rate of 300 tons (or 600,000 pounds) per hour.

The pound per hour limitation was 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:

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

Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limit listed above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gases.

The source shall use wet suppression at all times the crushers, screens, and conveyors are in operation in order to comply with this limit.

See Appendix A, for the detailed calculations.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The unlimited potential to emit SO2 from the #2 diesel fuel-fired portable crusher is less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations) do not apply and are not included in this renewal.
See Appendix A, 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 #2 diesel fuel-fired portable crusher 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 this renewal.

(e) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
The #2 diesel fuel-fired portable crusher 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 this renewal.

(f) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The #2 diesel fuel-fired portable crusher 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 this renewal.

*Cold-Mix Asphalt Production Operation*

(a) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The existing cold-mix asphalt production operation, a continued source of potential VOC emissions greater than twenty-five (25) tons per year, is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving); therefore, the requirements of 326 IAC 8-1-6 BACT still do not apply to the cold-mix asphalt production and are not included in the permit.

See Appendix A for the detailed calculations.

(b) 326 IAC 8-5-2 (Asphalt paving rules)
Any paving application made after January 1, 1980, is subject to the requirements of 326 IAC 8-5-2. Pursuant to this rule, no person shall cause or allow the use of cutback asphalt or asphalt emulsion containing 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; and

(c) application during the months of November, December, January, February and March.

(c) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)
The existing cold-mix asphalt production operation, a continued source of potential VOC emissions greater than one hundred (100) tons per year, is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving). Additionally, this source elected to limit their VOC emissions to less than one hundred (100) tons per year. Therefore, the

requirements of 326 IAC 8-6-1 (Organic Solvent Emission Limitations) still do not apply to the cold-mix asphalt production and are not included in the permit.

See Appendix A for the detailed calculations.

(d) There are no other 326 IAC 8 Rules that are applicable to the cold-mix asphalt production operation.

*Storage Tanks*

(a) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The potential to emit VOCs from each of the existing liquid asphalt storage tanks, identified as Tank-01 through Tank-03, the No. 2 fuel oil storage tank, identified as Tank-04, and the emulsion tack storage tank, identified as Tank-05, is still less than twenty-five (25) tons per year, therefore, the requirements of 326 IAC 8-1-6 still do not apply and are not included in the in the permit.

See Appendix A for the detailed calculations.

(b) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
The existing liquid asphalt storage tanks, identified as Tank-01 through Tank-03, the No. 2 fuel oil storage tank, identified as Tank-04, and the emulsion tack storage tank, identified as Tank-05, continue to have a maximum storage capacity of less than thirty-nine thousand (39,000) gallons, each. Therefore, are the requirements of 326 IAC 8-4-3 still do not apply to any of these tanks and are not included in the permit.

(c) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
The existing liquid asphalt storage tanks, identified as Tank-01 through Tank-03, the No. 2 fuel oil storage tank, identified as Tank-04, and the emulsion tack storage tank, identified as Tank-05, are each not subject to the requirements of this rule because the source is not located in Clark, Floyd, Lake, or Porter Counties.

(d) There are no other 326 IAC 8 Rules that are applicable to the existing storage tanks.

## Compliance Determination and Monitoring Requirements

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

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

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

*Compliance Determination & Testing Requirements*

(a) The existing dryer/mixer continues to have applicable compliance determination requirements as specified below:

(1) In order to comply with the PM, PM10, and PM2.5 limitations in the permit, the baghouse for the dryer/mixer, shall continue to be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.

(2) The annual hot-mix asphalt production rate will be used to verify compliance with the PSD PM emission limitation, the FESOP PM10, PM2.5, VOC, and CO emission limitations, and the BACT avoidance VOC emission limitation.

(3) The slag and fuel characteristics (i.e., sulfur content) and usage rates will be used to verify compliance with the SO2, NOx, and greenhouse gas emission limitations.

(4) The waste oil characteristics (i.e., ash, chlorine, and lead content) and usage rates will be used to verify compliance with the FESOP PM, PM10, PM2.5 and HAP limitations.

Note: The following terms and conditions from previous approvals have been revised in this FESOP Renewal:

- The used oil requirements (326 IAC 13-8) are not included in the permit, because they are regulated by another agency

(b) The liquid binder characteristics (i.e., evaporation temperature) and usage rate, in the production of cold-mix cutback asphalt, will be used to verify compliance with the FESOP VOC emission limitation.

*Testing Requirements*

The testing requirements applicable to this source are as follows:

| Emission Unit | Control Device | Pollutant | Timeframe for Testing | Frequency of Testing |
|---|---|---|---|---|
| Dryer/mixer | Baghouse | PM/PM10/PM2.5 | Within 5 yrs of last valid test(1) | Once every five (5) years |
| Dryer/mixer | N/A | SO2 | Within 180 days after initial use of Blast Furnace slag(2) | One time test |
| RAP Crusher | N/A | PM/PM10/PM2.5 *(opacity/fugitives)* | Within 180 days after initial use(3) | Once every five (5) years |

(1) Required for compliance with 40 CFR 60, Subpart I, and 326 IAC 2-8 (FESOP). The last valid dryer/mixer stack test for PM and PM10 occurred on September 7, 2010. The source was in compliance at that time.

(2) Testing shall only be performed if the company has not previously performed SO2 testing while using Blast Furnace slag in the aggregate mix at one of their other Indiana facilities.

(3) Required for compliance with 40 CFR 60, Subpart OOO, and 326 IAC 2-8 (FESOP), for fugitive emissions from affected facilities without water sprays. However, 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.

*Compliance Monitoring Requirements*

The existing drum mixer dryer/burner, baghouse stack exhaust, and the material processing and handling, crushing, screening, conveying, and material transfer points continue to have applicable compliance monitoring conditions as specified below:

| Emission Unit & Control Device | Parameter | Frequency | Range | Excursions and Exceedances |
|---|---|---|---|---|
| Dryer/mixer baghouse stack exhaust (S-1) | Visible Emissions | Once per day | normal/abnormal | Response Steps |
| | Pressure Drop | Once per day | 2.0 to 8.0 inches | Response Steps |
| | Bags in baghouse | As needed | normal/abnormal | Response Steps |
| Crushers, conveyors, screens, and material transfer points | Visible Emissions | Once per day | normal/abnormal | Response Steps |

These monitoring conditions are necessary because the baghouse used in conjunction with the hot-mix dryer/mixer must operate properly to ensure continued compliance with 40 CFR 60, Subpart I, 40 CFR 60, Subpart OOO, and 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permit Program) not applicable.

Note: The following terms and conditions from previous approvals have been revised in this FESOP Renewal:

The source will no longer be required to monitor and maintain the inlet temperature to the baghouse within a range of 200-400 degrees Fahrenheit to prevent overheating of the bags and to prevent low temperatures from mudding up the bags.
IDEM has determined that there is no process at this facility where temperature has an appreciable impact on the emission control equipment. The inlet temperature of the baghouse unit would merely measure the ambient temperature of the facility (ambient outdoor temperature). The temperature could vary by 14-20 degrees from winter to summer. Therefore, temperature is not an acceptable or meaningful parameter to observe at this facility.

Conversely, pressure drop is an indicator of a variety of conditions within the baghouse. Monitoring pressure drop can alert the operator to relative changes (such as dust cake resistance) over a period of time. The operator can use this information to chart trends and determine if the unit is operating within the optimal range as determined by baseline testing of the unit and manufacturer's specifications. Any deviations from the normal operational range of the unit, whether gradual or sudden, should alert the operator that the unit needs maintenance. Both gradual and sudden changes in the pressure drop could result in damage to the bags in the baghouse if not properly addressed. Therefore, IDEM has determined that monitoring the baghouse pressure drop is a better indicator of baghouse health.

## 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 December 29, 2010.

The operation of this source shall be subject to the conditions of the attached proposed FESOP Renewal F003-30070-03281. The staff recommends to the Commissioner that this FESOP Renewal 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) 234-5374 or toll free at 1-800-451-6027 extension 4-5374.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

**Appendix A.1: Unlimited Emissions Calculations**
**Entire Source**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Drum-mix Asphalt Plant Maximum Capacity**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr | | | | | | | | |
| Maximum Annual Asphalt Production = | 3,066,000 | ton/yr | | | | | | | | |
| Maximum Annual Blast Furnace Slag Usage = | 1,287,720 | ton/yr | 1.10 | % sulfur | | | | | | |
| Maximum Annual Steel Slag Usage = | 1,287,720 | ton/yr | 0.66 | % sulfur | | | | | | |
| Maximum Dryer Fuel Input Rate = | 100.0 | MMBtu/hr | | | | | | | | |
| Natural Gas Usage = | 876 | MMCF/yr | | | | | | | | |
| No. 2 Fuel Oil Usage = | 6,257,143 | gal/yr, and | 0.50 | % sulfur | | | | | | |
| No. 4 Fuel Oil Usage = | 0 | gal/yr, and | 0 | % sulfur | | | | | | |
| Refinery Blend / Residual (No. 4, No. 5 or No. 6) Fuel Oil Usage = | 6,257,143 | gal/yr, and | 0.75 | % 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 = | 6,257,143 | gal/yr, and | 1.00 | % sulfur | 1.00 | % ash | 0.200 | % chlorine, | 0.010 | % lead |
| Diesel Fuel Oil Usage (crusher only) = | 134,277 | gal/yr. | 0.50 | % sulfur | | | | | | |
| | | | | | | | | | | |
| Unlimited PM Dryer/Mixer Emission Factor = | 28.0 | lb/ton of asphalt production | | | | | | | | |
| Unlimited PM10 Dryer/Mixer Emission Factor = | 6.5 | lb/ton of asphalt production | | | | | | | | |
| Unlimited PM2.5 Dryer/Mixer Emission Factor = | 1.5 | 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 = | 0.54 | lb/ton of slag processed | | | | | | | | |
| Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor = | 0.0014 | lb/ton of slag processed | | | | | | | | |

**Unlimited/Uncontrolled Emissions**

| | Unlimited/Uncontrolled Potential to Emit (tons/year) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Criteria Pollutants | | | | | | | | Hazardous Air Pollutants | | |
| **Process Description** | **PM** | **PM10** | **PM2.5** | **SO2** | **NOx** | **VOC** | **CO** | **GHGs as CO2e** | **Total HAPs** | **Worst Case HAP** | |
| **Ducted Emissions** | | | | | | | | | | | |
| Dryer Fuel Combustion (worst case) | 200.23 | 159.56 | 159.56 | 459.90 | 147.04 | 3.13 | 36.79 | 78,277.93 | 45.12 | 41.30 | (hydrogen chloride) |
| Dryer/Mixer (Process) | 42,924.00 | 9,964.50 | 2,299.50 | 88.91 | 84.32 | 49.06 | 199.29 | 50,975.32 | 16.34 | 4.75 | (formaldehyde) |
| Dryer/Mixer Slag Processing | 0 | 0 | 0 | 347.68 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Hot Oil Heater Fuel Combustion (worst case) | 0.01 | 0.04 | 0.04 | 3.42E-03 | 0.57 | 0.03 | 0.48 | 688.38 | 0.011 | 0.010 | (hexane) |
| Crusher Fuel Combustion | 2.85 | 2.85 | 2.85 | 2.67 | 40.56 | 3.31 | 8.74 | 1,513.83 | 0.036 | 0.011 | (formaldehyde) |
| **Worst Case Emissions*** | **42,926.86** | **9,967.39** | **2,302.39** | **810.26** | **188.18** | **52.40** | **208.51** | **80,480.15** | **45.17** | **41.30** | (hydrogen chloride) |
| | | | | | | | | | | | |
| **Fugitive Emissions** | | | | | | | | | | | |
| Asphalt Load-Out, Silo Filling, On-Site Yard | 1.70 | 1.70 | 1.70 | 0 | 0 | 26.26 | 4.42 | 0 | 0.44 | 0.14 | (formaldehyde) |
| Material Storage Piles | 5.78 | 2.02 | 2.02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Material Processing and Handling | 9.90 | 4.68 | 0.71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Material Crushing, Screening, and Conveying | 48.64 | 17.77 | 17.77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Unpaved and Paved Roads (worst case) | 82.55 | 21.04 | 2.10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Cold Mix Asphalt Production | 0 | 0 | 0 | 0 | 0 | 36,845.66 | 0 | 0 | 9,610.71 | 3,316.11 | (xylenes) |
| Gasoline Fuel Transfer and Dispensing | 0 | 0 | 0 | 0 | 0 | 0.74 | 0 | 0 | 0.19 | 0.07 | (xylenes) |
| Volatile Organic Liquid Storage Vessels | 0 | 0 | 0 | 0 | 0 | negl | 0 | 0 | negl | 0 | |
| **Total Fugitive Emissions** | **148.57** | **47.21** | **24.30** | **0.00** | **0.00** | **36,872.65** | **4.42** | **0** | **9,611.34** | **3,316.18** | (xylenes) |
| | | | | | | | | | | | |
| **Totals Unlimited/Uncontrolled PTE** | **43,075.43** | **10,014.60** | **2,326.69** | **810.26** | **188.18** | **36,925.05** | **212.92** | **80,480.15** | **9,656.51** | **3,316.18** | (xylenes) |

negl = negligible
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
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:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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 Hourly Asphalt Production = | 350 | ton/hr | | | | | | | | |
| Maximum Annual Asphalt Production = | 3,066,000 | ton/yr | | | | | | | | |
| Maximum Fuel Input Rate = | 100 | MMBtu/hr | | | | | | | | |
| Natural Gas Usage = | 876 | MMCF/yr | | | | | | | | |
| No. 2 Fuel Oil Usage = | 6,257,143 | gal/yr, and | 0.50 | % sulfur | | | | | | |
| No. 4 Fuel Oil Usage = | 0 | gal/yr, and | 0 | % sulfur | | | | | | |
| Refinery Blend / Residual (No. 4, No. 5 or No. 6) Fuel Oil Usage = | 6,257,143 | gal/yr, and | 0.75 | % 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 = | 6,257,143 | gal/yr, and | 1.00 | % sulfur | 1.00 | % ash | 0.200 | % chlorine, | 0.010 | % lead |

**Unlimited/Uncontrolled Emissions**

| | Emission Factor (units) | | | | | | | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Criteria Pollutant | Natural Gas (lb/MMCF) | No. 2 Fuel Oil (lb/kgal) | No. 4 Fuel Oil* (lb/kgal) | Refinery Blend / Residual (No. 4, 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) | Refinery Blend / Residual (No. 4, 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 | 10.1125 | 0.5 | 0.6 | 64.0 | 0.83 | 6.26 | 0 | 31.64 | 0 | 0 | 200.23 | **200.23** |
| PM10/PM2.5 | 7.6 | 3.3 | 8.3 | 11.6125 | 0.5 | 0.6 | 51 | 3.33 | 10.32 | 0 | 36.33 | 0 | 0 | 159.56 | **159.56** |
| SO2 | 0.6 | 71.0 | 0 | 117.8 | 0 | 0 | 147.0 | 0.26 | 222.13 | 0 | 368.39 | 0 | 0 | 459.90 | **459.90** |
| NOx | 190 | 24.0 | 47.0 | 47.0 | 13.0 | 15.0 | 19.0 | 83.22 | 75.09 | 0 | 147.04 | 0 | 0 | 59.44 | **147.04** |
| VOC | 5.5 | 0.20 | 0.20 | 0.28 | 1.00 | 1.10 | 1.0 | 2.41 | 0.63 | 0 | 0.88 | 0 | 0 | 3.13 | **3.13** |
| CO | 84 | 5.0 | 5.0 | 5.0 | 7.5 | 8.4 | 5.0 | 36.792 | 15.64 | 0 | 15.64 | 0 | 0 | 15.64 | **36.79** |
| Hazardous Air Pollutant | | | | | | | | | | | | | | | |
| HCl | | | | | | | 13.2 | | | | | | | 41.30 | **41.30** |
| Antimony | | | 5.25E-03 | 5.25E-03 | | | negl | | | 0 | 1.64E-02 | | | negl | **0.02** |
| Arsenic | 2.0E-04 | 5.6E-04 | 1.32E-03 | 1.32E-03 | | | 1.1E-01 | 8.8E-05 | 1.75E-03 | 0 | 4.13E-03 | | | 3.44E-01 | **0.34** |
| Beryllium | 1.2E-05 | 4.2E-04 | 2.78E-05 | 2.78E-05 | | | negl | 5.3E-06 | 1.31E-03 | 0 | 8.70E-05 | | | negl | **1.3E-03** |
| Cadmium | 1.1E-03 | 4.2E-04 | 3.98E-04 | 3.98E-04 | | | 9.3E-03 | 4.8E-04 | 1.31E-03 | 0 | 1.25E-03 | | | 2.91E-02 | **0.03** |
| Chromium | 1.4E-03 | 4.2E-04 | 8.45E-04 | 8.45E-04 | | | 2.0E-02 | 6.1E-04 | 1.31E-03 | 0 | 2.64E-03 | | | 6.26E-02 | **0.06** |
| Cobalt | 8.4E-05 | | 6.02E-03 | 6.02E-03 | | | 2.1E-04 | 3.7E-05 | | 0 | 1.88E-02 | | | 6.57E-04 | **0.02** |
| Lead | 5.0E-04 | 1.3E-03 | 1.51E-03 | 1.51E-03 | | | 0.55 | 2.2E-04 | 3.94E-03 | 0 | 4.72E-03 | | | 1.7E+00 | **1.72** |
| Manganese | 3.8E-04 | 8.4E-04 | 3.00E-03 | 3.00E-03 | | | 6.8E-02 | 1.7E-04 | 2.63E-03 | 0 | 9.39E-03 | | | 2.13E-01 | **0.21** |
| Mercury | 2.6E-04 | 4.2E-04 | 1.13E-04 | 1.13E-04 | | | | 1.1E-04 | 1.31E-03 | 0 | 3.54E-04 | | | | **1.3E-03** |
| Nickel | 2.1E-03 | 4.2E-04 | 8.45E-02 | 8.45E-02 | | | 1.1E-02 | 9.2E-04 | 1.31E-03 | 0 | 2.64E-01 | | | 3.44E-02 | **0.264** |
| Selenium | 2.4E-05 | 2.1E-03 | 6.83E-04 | 6.83E-04 | | | negl | 1.1E-05 | 6.57E-03 | 0 | 2.14E-03 | | | negl | **6.6E-03** |
| 1.1.1-Trichloroethane | | | 2.36E-04 | 2.36E-04 | | | | | | 0 | 7.38E-04 | | | | **7.4E-04** |
| 1,3-Butadiene | | | | | | | | | | | | | | | **0** |
| Acetaldehyde | | | | | | | | | | | | | | | **0** |
| Acrolein | | | | | | | | | | | | | | | **0** |
| Benzene | 2.1E-03 | | 2.14E-04 | 2.14E-04 | | | | 9.2E-04 | | 0 | 6.70E-04 | | | | **9.2E-04** |
| Bis(2-ethylhexyl)phthalate | | | | | | | 2.2E-03 | | | | | | | 6.88E-03 | **6.9E-03** |
| Dichlorobenzene | 1.2E-03 | | | | | | 8.0E-07 | 5.3E-04 | | | | | | 2.50E-06 | **5.3E-04** |
| Ethylbenzene | | | 6.36E-05 | 6.36E-05 | | | | | | 0 | 1.99E-04 | | | | **2.0E-04** |
| Formaldehyde | 7.5E-02 | 6.10E-02 | 3.30E-02 | 3.30E-02 | | | | 3.3E-02 | 1.91E-01 | 0 | 1.03E-01 | | | | **0.191** |
| Hexane | 1.8E+00 | | | | | | | 0.79 | | | | | | | **0.788** |
| Phenol | | | | | | | 2.4E-03 | | | | | | | 7.51E-03 | **7.5E-03** |
| Toluene | 3.4E-03 | | 6.20E-03 | 6.20E-03 | | | | 1.5E-03 | | 0 | 1.94E-02 | | | | **0.02** |
| Total PAH Haps | negl | | 1.13E-03 | 1.13E-03 | | | 3.9E-02 | negl | | 0 | 3.54E-03 | | | 1.22E-01 | **0.12** |
| Polycyclic Organic Matter | | 3.30E-03 | | | | | | | 1.03E-02 | | | | | | **0.01** |
| Xylene | | | 1.09E-04 | 1.09E-04 | | | | | | 0 | 3.41E-04 | | | | **3.4E-04** |
| | | | | | | | **Total HAPs** | **0.83** | **0.22** | **0** | **0.45** | **0** | **0** | **43.84** | **45.12** |

**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 9/98), 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
Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Tables 3.3-1 and 3.3-2

*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

**Appendix A.1: Unlimited Emissions Calculations**
**Greenhouse Gas (CO2e) Emissions from the**
**Dryer/Mixer Fuel Combustion with Maximum Capacity≥ 100 MMBtu/hr**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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 Hourly Asphalt Production = | 350 | ton/hr | | | | | | | | |
| Maximum Annual Asphalt Production = | 3,066,000 | ton/yr | | | | | | | | |
| Maximum Fuel Input Rate = | 100 | MMBtu/hr | | | | | | | | |
| Natural Gas Usage = | 876 | MMCF/yr | | | | | | | | |
| No. 2 Fuel Oil Usage = | 6,257,143 | gal/yr, and | 0.50 | % sulfur | | | | | | |
| No. 4 Fuel Oil Usage = | 0 | gal/yr, and | 0 | % sulfur | | | | | | |
| Refinery Blend / Residual (No. 4, No. 5 or No. 6) Fuel Oil Usage = | 6,257,143 | gal/yr, and | 0.75 | % 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 = | 6,257,143 | gal/yr, and | 1.00 | % sulfur | 1.00 | % ash | 0.200 | % chlorine, | 0.010 | % lead |

**Unlimited/Uncontrolled Emissions**

| | Emission Factor (units) | | | | | | |
|---|---|---|---|---|---|---|---|
| CO2e Fraction | Natural Gas (lb/MMCF) | No. 2 Fuel Oil (lb/kgal) | No. 4 Fuel Oil (lb/kgal) | Refinery Blend / Residual (No. 4, No. 5 or No. 6) Fuel Oil (lb/kgal) | Propane (lb/kgal) | Butane (lb/kgal) | Used/Waste Oil (lb/kgal) |
| CO2 | 120,161.84 | 22,501.41 | 24,153.46 | 24,835.04 | 12,500.00 | 14,506.73 | 22,024.15 |
| CH4 | 2.49 | 0.91 | 0.97 | 1.00 | 0.60 | 0.67 | 0.89 |
| N2O | 2.2 | 0.26 | 0.19 | 0.53 | 0.9 | 0.9 | 0.18 |

| Greenhouse Warming Potentials (GWP) | | |
|---|---|---|
| Name | Chemical Formula | Global warming potential |
| Carbon dioxide | $CO_2$ | 1 |
| Methane | $CH_4$ | 21 |
| Nitrous oxide | $N_2O$ | 310 |

| | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | | | | | |
|---|---|---|---|---|---|---|---|
| CO2e Fraction | Natural Gas (tons/yr) | No. 2 Fuel Oil (tons/yr) | No. 4 Fuel Oil (tons/yr) | Refinery Blend / Residual (No. 4, No. 5 or No. 6) Fuel Oil (tons/yr) | Propane (tons/yr) | Butane (tons/yr) | Used/ Waste Oil (tons/yr) |
| CO2 | 52,630.89 | 70,397.27 | 0 | 77,698.21 | 0 | 0 | 68,904.14 |
| CH4 | 1.09 | 2.86 | 0 | 3.13 | 0 | 0 | 2.79 |
| N2O | 0.96 | 0.81 | 0 | 1.66 | 0 | 0 | 0.56 |
| Total | 52,632.94 | 70,400.94 | 0 | 77,703.00 | 0 | 0 | 68,907.49 |
| CO2e Equivalent Emissions (tons/yr) | 52,952.54 | 70,709.41 | 0 | 78,277.93 | 0 | 0 | 69,137.37 |

| CO2e for Worst Case Fuel* (tons/yr) |
|---|
| 78,277.93 |

**Refinery Blend / Residual (No. 5 or No. 6) Fuel Oil**

**Methodology**
Fuel Usage from TSD Appendix A.1, page 1 of 14.
Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Fuel 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/0.0915 MMBtu]
Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.102 MMBtu]
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2
No. 2 Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 9/98), Table 1.3-8
No.4 Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 9/98), Table 1.3-8
Refinery Blend / Residual (No. 5 or No. 6) Fuel Oil: Emission Factor for CO2 from 40 CFR Part 98 Subpart C, Table C-1, has been converted from kg/mmBtu to lb/kgal. Emission Factors for CH4 and N2O from AP-42 Chapter 1.3 (dated 9/98), Table 1.3-8
Propane: Emission Factor for CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, has been converted from kg/mmBtu to lb/kgal. Emission Factors for CO2 and N2O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1
Butane: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1
Waste Oil: Emission Factors for CO2, CH4, and N2O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions
Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]
Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

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]
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (310).

**Abbreviations**
PTE = Potential to Emit
CO2 = Carbon Dioxide
CH4 = Methane
N2O = Nitrogen Dioxide

**Appendix A.1: Unlimited Emissions Calculations**
**Dryer/Mixer**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

| | | |
|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr |
| Maximum Annual Asphalt Production = | 3,066,000 | ton/yr |

| | Uncontrolled Emission Factors (lb/ton) | | | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | | |
|---|---|---|---|---|---|---|---|
| | Drum-Mix Plant (dryer/mixer) | | | Drum-Mix Plant (dryer/mixer) | | | |
| Criteria Pollutant | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | **Worse Case PTE** |
| PM* | 28 | 28 | 28 | 42,924.00 | 42,924.00 | 42,924.00 | **42,924.00** |
| PM10* | 6.5 | 6.5 | 6.5 | 9,964.50 | 9,964.50 | 9,964.50 | **9,964.50** |
| PM2.5* | 1.5 | 1.5 | 1.5 | 2,299.50 | 2,299.50 | 2,299.50 | **2,299.50** |
| SO2** | 0.0034 | 0.011 | 0.058 | 5.21 | 16.86 | 88.91 | **88.91** |
| NOx** | 0.026 | 0.055 | 0.055 | 39.86 | 84.32 | 84.32 | **84.32** |
| VOC** | 0.032 | 0.032 | 0.032 | 49.06 | 49.06 | 49.06 | **49.06** |
| CO*** | 0.13 | 0.13 | 0.13 | 199.29 | 199.29 | 199.29 | **199.29** |
| Hazardous Air Pollutant | | | | | | | |
| HCl | | | 2.10E-04 | | | 3.22E-01 | **0.32** |
| Antimony | 1.80E-07 | 1.80E-07 | 1.80E-07 | 2.76E-04 | 2.76E-04 | 2.76E-04 | **2.76E-04** |
| Arsenic | 5.60E-07 | 5.60E-07 | 5.60E-07 | 8.58E-04 | 8.58E-04 | 8.58E-04 | **8.58E-04** |
| Beryllium | negl | negl | negl | negl | negl | negl | **0** |
| Cadmium | 4.10E-07 | 4.10E-07 | 4.10E-07 | 6.29E-04 | 6.29E-04 | 6.29E-04 | **6.29E-04** |
| Chromium | 5.50E-06 | 5.50E-06 | 5.50E-06 | 8.43E-03 | 8.43E-03 | 8.43E-03 | **8.43E-03** |
| Cobalt | 2.60E-08 | 2.60E-08 | 2.60E-08 | 3.99E-05 | 3.99E-05 | 3.99E-05 | **3.99E-05** |
| Lead | 6.20E-07 | 1.50E-05 | 1.50E-05 | 9.50E-04 | 2.30E-02 | 2.30E-02 | **0.02** |
| Manganese | 7.70E-06 | 7.70E-06 | 7.70E-06 | 1.18E-02 | 1.18E-02 | 1.18E-02 | **0.01** |
| Mercury | 2.40E-07 | 2.60E-06 | 2.60E-06 | 3.68E-04 | 3.99E-03 | 3.99E-03 | **3.99E-03** |
| Nickel | 6.30E-05 | 6.30E-05 | 6.30E-05 | 0.10 | 0.10 | 0.10 | **0.10** |
| Selenium | 3.50E-07 | 3.50E-07 | 3.50E-07 | 5.37E-04 | 5.37E-04 | 5.37E-04 | **5.37E-04** |
| 2,2,4 Trimethylpentane | 4.00E-05 | 4.00E-05 | 4.00E-05 | 0.06 | 0.06 | 0.06 | **0.06** |
| Acetaldehyde | | | 1.30E-03 | | | 1.99 | **1.99** |
| Acrolein | | | 2.60E-05 | | | 3.99E-02 | **0.04** |
| Benzene | 3.90E-04 | 3.90E-04 | 3.90E-04 | 0.60 | 0.60 | 0.60 | **0.60** |
| Ethylbenzene | 2.40E-04 | 2.40E-04 | 2.40E-04 | 0.37 | 0.37 | 0.37 | **0.37** |
| Formaldehyde | 3.10E-03 | 3.10E-03 | 3.10E-03 | 4.75 | 4.75 | 4.75 | **4.75** |
| Hexane | 9.20E-04 | 9.20E-04 | 9.20E-04 | 1.41 | 1.41 | 1.41 | **1.41** |
| Methyl chloroform | 4.80E-05 | 4.80E-05 | 4.80E-05 | 0.07 | 0.07 | 0.07 | **0.07** |
| MEK | | | 2.00E-05 | | | 0.03 | **0.03** |
| Propionaldehyde | | | 1.30E-04 | | | 0.20 | **0.20** |
| Quinone | | | 1.60E-04 | | | 0.25 | **0.25** |
| Toluene | 1.50E-04 | 2.90E-03 | 2.90E-03 | 0.23 | 4.45 | 4.45 | **4.45** |
| Total PAH Haps | 1.90E-04 | 8.80E-04 | 8.80E-04 | 0.29 | 1.35 | 1.35 | **1.35** |
| Xylene | 2.00E-04 | 2.00E-04 | 2.00E-04 | 0.31 | 0.31 | 0.31 | **0.31** |
| | | | | | | **Total HAPs** | **16.34** |
| | | | | | | **Worst Single HAP** | **4.75** **(formaldehyde)** |

**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, 11.1-7, 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**

VOC - Volatile Organic Compounds
HCl = Hydrogen Chloride
SO2 = Sulfur Dioxide
HAP = Hazardous Air Pollutant
PAH = Polyaromatic Hydrocarbon

**Appendix A.1: Unlimited Emissions Calculations**
**Greenhouse Gas (CO2e) Emissions from the**
**Drum-Mix Plant (Dryer/Mixer) Process Emissions**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

| | | |
|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr |
| Maximum Annual Asphalt Production = | 3,066,000 | ton/yr |

| Criteria Pollutant | Emission Factor or Limitation (lb/ton) Drum-Mix Plant (dryer/mixer, controlled by fabric filter) | | | Greenhouse Gas Global Warming Potentials (GWP) | Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer, controlled by fabric filter) | | | **CO2e for Worst Case Fuel (tons/yr)** |
|---|---|---|---|---|---|---|---|---|
| | Natural Gas | No. 2 Fuel Oil | Waste Oil | | Natural Gas | No. 2 Fuel Oil | Waste Oil | |
| CO2 | 33 | 33 | 33 | 1 | 50,589.00 | 50,589.00 | 50,589.00 | **50,975.32** |
| CH4 | 0.0120 | 0.0120 | 0.0120 | 21 | 18.40 | 18.40 | 18.40 | |
| N2O | | | | 310 | 0 | 0 | 0 | |
| | | | | Total | 50,607.40 | 50,607.40 | 50,607.40 | |
| | | | | CO2e Equivalent Emissions (tons/yr) | 50,975.32 | 50,975.32 | 50,975.32 | |

**Methodology**
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.
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8
There are no emission factors for N20 available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (310).

Abbreviations
CO2 = Carbon Dioxide CH4 = Methane N2O = Nitrogen Dioxide PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations**
**Dryer/Mixer Slag Processing**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

The following calculations determine the unlimited emissions from the processing of slag in the aggregate drying/mixing

| | | | | |
|---|---|---|---|---|
| Maximum Annual Blast Furnace Slag Usage* = | 1,287,720 | ton/yr | 1.10 | % sulfur |
| Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor [1] = | 0.540 | lb/ton of slag processed | | |
| Maximum Annual Steel Slag Usage* = | 1,287,720 | | 0.66 | % sulfur |
| Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor [2] = | 0.0014 | lb/ton of slag processed | | |

| Slag Type | Emission Factor (lb/ton)** | Unlimited Potential to Emit (tons/yr) |
|---|---|---|
| Blast Furnace Slag | 0.54 | 347.68 |
| Steel Slag | 0.0014 | 0.90 |

**Methodology**

* The maximum annual slag usage was provided by the source.

[1] 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.

[2] 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**
**Hot Oil Heater**
**Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

| | | | | |
|---|---|---|---|---|
| Maximum Hot Oil Heater Fuel Input Rate = | 1.30 | MMBtu/hr | | |
| Natural Gas Usage = | 11 | MMCF/yr | | |
| No. 2 Fuel Oil Usage = | 0 | gal/yr, and | 0.50 | % sulfur |

**Unlimited/Uncontrolled Emissions**

| | Emission Factor (units) | | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | |
|---|---|---|---|---|---|
| | Hot Oil Heater | | Hot Oil Heater | | |
| Criteria Pollutant | Natural Gas (lb/MMCF) | No. 2 Fuel Oil (lb/kgal) | Natural Gas (tons/yr) | No. 2 Fuel Oil (tons/yr) | **Worse Case Fuel (tons/yr)** |
| PM | 1.9 | 2.0 | 0.011 | 0 | **0.01** |
| PM10/PM2.5 | 7.6 | 3.3 | 0.043 | 0 | **0.04** |
| SO2 | 0.6 | 71.0 | 0.003 | 0 | **3.42E-03** |
| NOx | 100 | 20.0 | 0.569 | 0 | **0.57** |
| VOC | 5.5 | 0.20 | 0.031 | 0 | **0.03** |
| CO | 84 | 5.0 | 0.478 | 0 | **0.48** |
| Hazardous Air Pollutant | | | | | |
| Arsenic | 2.0E-04 | 5.6E-04 | 1.1E-06 | 0 | **1.1E-06** |
| Beryllium | 1.2E-05 | 4.2E-04 | 6.8E-08 | 0 | **6.8E-08** |
| Cadmium | 1.1E-03 | 4.2E-04 | 6.3E-06 | 0 | **6.3E-06** |
| Chromium | 1.4E-03 | 4.2E-04 | 8.0E-06 | 0 | **8.0E-06** |
| Cobalt | 8.4E-05 | | 4.8E-07 | | **4.8E-07** |
| Lead | 5.0E-04 | 1.3E-03 | 2.8E-06 | 0 | **2.8E-06** |
| Manganese | 3.8E-04 | 8.4E-04 | 2.2E-06 | 0 | **2.2E-06** |
| Mercury | 2.6E-04 | 4.2E-04 | 1.5E-06 | 0 | **1.5E-06** |
| Nickel | 2.1E-03 | 4.2E-04 | 1.2E-05 | 0 | **1.2E-05** |
| Selenium | 2.4E-05 | 2.1E-03 | 1.4E-07 | 0 | **1.4E-07** |
| Benzene | 2.1E-03 | | 1.2E-05 | | **1.2E-05** |
| Dichlorobenzene | 1.2E-03 | | 6.8E-06 | | **6.8E-06** |
| Ethylbenzene | | | | | **0** |
| Formaldehyde | 7.5E-02 | 6.10E-02 | 4.3E-04 | 0 | **4.3E-04** |
| Hexane | 1.8E+00 | | 0.01 | | **0.01** |
| Phenol | | | | | **0** |
| Toluene | 3.4E-03 | | 1.9E-05 | | **1.9E-05** |
| Total PAH Haps | negl | | negl | | **0** |
| Polycyclic Organic Matter | | 3.30E-03 | | 0 | **0** |
| | | **Total HAPs =** | **1.1E-02** | **0** | **0.011** |

**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 9/98), 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)
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**
**Greenhouse Gas (CO2e) Emissions from**
**Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**
**from the Hot oil Heating System**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

| | | | | |
|---|---|---|---|---|
| Maximum Hot Oil Heater Fuel Input Rate = | 1.30 | MMBtu/hr | | |
| Natural Gas Usage = | 11 | MMCF/yr | | |
| No. 2 Fuel Oil Usage = | 0 | gal/yr, | 0.50 | % sulfur |

**Unlimited/Uncontrolled Emissions**

| Criteria Pollutant | Emission Factor (units) Natural Gas (lb/MMCF) | Emission Factor (units) No. 2 Fuel Oil (lb/kgal) | Greenhouse Global Warming Potentials (GWP) | Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr) | Unlimited/Uncontrolled Potential to Emit (tons/yr) No. 2 Fuel Oil (tons/yr) | Worse Case CO2e Emissions (tons/yr) |
|---|---|---|---|---|---|---|
| CO2 | 120,161.84 | 22,501.41 | 1 | 684.20 | 0 | 688.38 |
| CH4 | 2.49 | 0.91 | 21 | 0.01 | 0 | |
| N2O | 2.2 | 0.26 | 310 | 0.01 | 0 | |
| | | | | 684.23 | 0 | |
| CO2e Equivalent Emissions (tons/yr) | | | | 688.38 | 0 | |

**Methodology**

Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
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]
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98),

No. 2 Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 9/98), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

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)] *

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x

**Abbreviations**

CO2 = Carbon Dioxide
CH4 = Methane
N2O = Nitrogen Dioxide
PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations**
**Reciprocating Internal Combustion Engines**
**Diesel Fuel-fired Portable Crusher**
**Output Rating (<= 600 HP)**
**Maximum Input Rate (<= 4.2 MMBtu/hr)**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Emissions calculated based on output rating (hp)**

| | | | | |
|---|---|---|---|---|
| Output Horsepower Rating (hp) | 300.0 | | | |
| Maximum Operating Hours per Year | 8760 | | | |
| Unlimited Potential Throughput (hp-hr/yr) | 2,628,000 | | | |
| Unlimited Potential Diesel Engine Oil Usage = | 134,277 | gal/yr, and | 0.50 | % sulfur |

| | Criteria Pollutants | | | | | | |
|---|---|---|---|---|---|---|---|
| | PM* | PM10* | PM2.5* | SO2 | NOx | VOC | CO |
| Emission Factor in lb/kgal | 42.47 | 42.47 | 42.47 | 39.73 | 604.17 | 49.32 | 130.15 |
| Potential Emission in tons/yr | 2.85 | 2.85 | 2.85 | 2.67 | 40.56 | 3.31 | 8.74 |

*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) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Benzene | Toluene | Xylene | 1,3-Butadiene | Formaldehyde | Acetaldehyde | Acrolein | Total PAH HAPs*** |
| Emission Factor in lb/kgal**** | 1.28E-01 | 5.60E-02 | 3.90E-02 | 5.36E-03 | 1.62E-01 | 1.05E-01 | 1.27E-02 | 2.30E-02 |
| Potential Emission in tons/yr | 8.58E-03 | 3.76E-03 | 2.62E-03 | 3.60E-04 | **0.011** | 7.05E-03 | 8.51E-04 | 1.55E-03 |

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/MMBtu were converted to lb/kgal using the heating value of diesel fuel oil (137,000 Btu/gal) as taken from AP 42 Appendix A (09/85), page A-5.

| | |
|---|---|
| **Potential Emission of Total Combined HAPs (tons/yr)** | **0.036** |

**Notes**
Constant: 1 kilogallon (kgal) = 1000 gallons (gal)
The heating value of Diesel fuel oil is 137,000 Btu/gal as taken from AP 42 Appendix A (09/85), page A-5.
Emission Factors for Diesel Fuel Oil combustion are from AP 42 - 3.3 Gasoline and Diesel Industrial Engines (Supplement B 10/96), Tables 3.3-1 and 3.3-2

**Methodology**
Potential Throughput (hp-hr/yr) = Output Horsepower Rating (hp) * Maximum Operating Hours per Year
Unlimited Potential Diesel Engine Oil Usage (gal/yr) = [(Potential Throughput (hp-hr/yr) * average brake specific fuel consumption of 7,000 Btu/hp-hr) / 137,000 Btu/gal]

Unlimited Potential to Emit (tons/yr) = [(Unlimited Potential Diesel Engine Oil Usage (gal/yr)) * Emission Factor (lb/kgal)) / (1000 gal/kgal * 2,000 lb/ton)]

**ATSD Appendix A.1: Unlimited Emissions Calculations**
**Greenhouse Gas (CO2e) Emissions from the**
**Diesel Fuel-fired Portable Crusher**
**Reciprocating Internal Combustion Engines**
**Output Rating (<= 600 HP)**
**Maximum Input Rate (<= 4.2 MMBtu/hr)**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

Emissions calculated based on output rating (hp)

| | | | | |
|---|---|---|---|---|
| Output Horsepower Rating (hp) | 300.0 | | | |
| Maximum Operating Hours per Year | 8760 | | | |
| Potential Throughput (hp-hr/yr) | 2,628,000 | | | |
| Diesel Engine Oil Usage[1] = | 134,277 | gal/yr, and | 0.50 | % sulfur |

| Greenhouse Warming Potentials (GWP) | | |
|---|---|---|
| Name | Chemical Formula | Global warming potential |
| Carbon dioxide | $CO_2$ | 1 |
| Methane | $CH_4$ | 21 |
| Nitrous oxide | $N_2O$ | 310 |

| | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/kgal | 22,472.92 | 0.91 | 0.18 |
| Potential Emission in tons/yr | 1,508.80 | 0.061 | 0.012 |
| Summed Potential Emissions in tons/yr | 1,508.88 | | |
| CO2e Equivalent Emissions (tons/yr) | 1,513.83 | | |

**Notes**
Constant: 1 kilogallon (kgal) = 1000 gallons (gal)
The heating value of Diesel fuel oil is 137,000 Btu/gal as taken from AP 42 Appendix A (09/85), page A-5.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)
Diesel Engine Oil: Emission Factor for CO2 from AP-42 Chapter 3.3 (dated 10/96), Table 3.3-1, has been converted from lb/MMBtu to lb/kgal. Emission Factors for CH4 and N2O from 40 CFR Part 98 Subpart C, Table C-2, have been converted from kg/mmBtu to lb/kgal.
Emission Factor (EF) Conversion
for CO2: EF (lb/kgal) = [EF (lb/MMbtu) x average heating value of diesel (19,300 Btu/lb) x Conversion Factor (1/1,000,000 MMBtu/Btu) x density of diesel (7.1 lb/gal) x Conversion Factor (1,000 gal/kgal)
for CH4 & N2O: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

**Methodology**
Potential Throughput (hp-hr/yr) = Output Horsepower Rating (hp) * Maximum Operating Hours per Year
Unlimited Potential Diesel Engine Oil Usage (gal/yr) = [(Potential Throughput (hp-hr/yr) * average brake specific fuel consumption of 7,000 Btu/hp-hr) / 137,000 Btu/gal]
Unlimited Potential to Emit (tons/yr) = [(Unlimited Potential Diesel Engine Oil Usage (gal/yr)) * Emission Factor (lb/kgal)) / (1000 gal/kgal * 2,000 lb/ton)]
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O (ton/yr) x N2O GWP (310).

**Appendix A.1: Unlimited Emissions Calculations**
**Asphalt Load-Out, Silo Filling, and Yard Emissions**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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 = | 3,066,000 | tons/yr |

| | Emission Factor (lb/ton asphalt) | | | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | | |
|---|---|---|---|---|---|---|---|
| **Pollutant** | **Load-Out** | **Silo Filling** | **On-Site Yard** | **Load-Out** | **Silo Filling** | **On-Site Yard** | **Total** |
| Total PM* | 5.2E-04 | 5.9E-04 | NA | 0.80 | 0.90 | NA | **1.70** |
| Organic PM | 3.4E-04 | 2.5E-04 | NA | 0.52 | 0.389 | NA | **0.91** |
| TOC | 0.004 | 0.012 | 0.001 | 6.38 | 18.68 | 1.686 | **26.7** |
| CO | 0.001 | 0.001 | 3.5E-04 | 2.07 | 1.809 | 0.540 | **4.42** |

NA = Not Applicable (no AP-42 Emission Factor)

| | | | | |
|---|---|---|---|---|
| **PM/HAPs** | **0.037** | **0.044** | **0** | **0.081** |
| **VOC/HAPs** | **0.094** | **0.238** | **0.025** | **0.357** |
| **non-VOC/HAPs** | **4.9E-04** | **5.0E-05** | **1.3E-04** | **6.7E-04** |
| **non-VOC/non-HAPs** | **0.46** | **0.26** | **0.12** | **0.85** |

| | | | | |
|---|---|---|---|---|
| **Total VOCs** | **5.99** | **18.68** | **1.6** | **26.3** |
| **Total HAPs** | **0.13** | **0.28** | **0.025** | **0.44** |
| | | | **Worst Single HAP** | **0.136 (formaldehyde)** |

**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
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.1: Unlimited Emissions Calculations**
**Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Organic Particulate-Based Compounds (Table 11.1-15)**

| | | | | | Speciation Profile | | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Pollutant** | **CASRN** | **Category** | **HAP Type** | **Source** | **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** |
| PAH HAPs | | | | | | | | | | |
| Acenaphthene | 83-32-9 | PM/HAP | POM | Organic PM | 0.26% | 0.47% | 1.4E-03 | 1.8E-03 | NA | 3.2E-03 |
| Acenaphthylene | 208-96-8 | PM/HAP | POM | Organic PM | 0.028% | 0.014% | 1.5E-04 | 5.4E-05 | NA | 2.0E-04 |
| Anthracene | 120-12-7 | PM/HAP | POM | Organic PM | 0.07% | 0.13% | 3.7E-04 | 5.1E-04 | NA | 8.7E-04 |
| Benzo(a)anthracene | 56-55-3 | PM/HAP | POM | Organic PM | 0.019% | 0.056% | 9.9E-05 | 2.2E-04 | NA | 3.2E-04 |
| Benzo(b)fluoranthene | 205-99-2 | PM/HAP | POM | Organic PM | 0.0076% | 0 | 4.0E-05 | 0 | NA | 4.0E-05 |
| Benzo(k)fluoranthene | 207-08-9 | PM/HAP | POM | Organic PM | 0.0022% | 0 | 1.1E-05 | 0 | NA | 1.1E-05 |
| Benzo(g,h,i)perylene | 191-24-2 | PM/HAP | POM | Organic PM | 0.0019% | 0 | 9.9E-06 | 0 | NA | 9.9E-06 |
| Benzo(a)pyrene | 50-32-8 | PM/HAP | POM | Organic PM | 0.0023% | 0 | 1.2E-05 | 0 | NA | 1.2E-05 |
| Benzo(e)pyrene | 192-97-2 | PM/HAP | POM | Organic PM | 0.0078% | 0.0095% | 4.1E-05 | 3.7E-05 | NA | 7.8E-05 |
| Chrysene | 218-01-9 | PM/HAP | POM | Organic PM | 0.103% | 0.21% | 5.4E-04 | 8.2E-04 | NA | 1.4E-03 |
| Dibenz(a,h)anthracene | 53-70-3 | PM/HAP | POM | Organic PM | 0.00037% | 0 | 1.9E-06 | 0 | NA | 1.9E-06 |
| Fluoranthene | 206-44-0 | PM/HAP | POM | Organic PM | 0.05% | 0.15% | 2.6E-04 | | NA | 2.6E-04 |
| Fluorene | 86-73-7 | PM/HAP | POM | Organic PM | 0.77% | 1.01% | 4.0E-03 | 3.9E-03 | NA | 8.0E-03 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | PM/HAP | POM | Organic PM | 0.00047% | 0 | 2.5E-06 | 0 | NA | 2.5E-06 |
| 2-Methylnaphthalene | 91-57-6 | PM/HAP | POM | Organic PM | 2.38% | 5.27% | 1.2E-02 | 2.1E-02 | NA | 0.033 |
| Naphthalene | 91-20-3 | PM/HAP | POM | Organic PM | 1.25% | 1.82% | 6.5E-03 | 7.1E-03 | NA | 1.4E-02 |
| Perylene | 198-55-0 | PM/HAP | POM | Organic PM | 0.022% | 0.03% | 1.1E-04 | 1.2E-04 | NA | 2.3E-04 |
| Phenanthrene | 85-01-8 | PM/HAP | POM | Organic PM | 0.81% | 1.80% | 4.2E-03 | 7.0E-03 | NA | 1.1E-02 |
| Pyrene | 129-00-0 | PM/HAP | POM | Organic PM | 0.15% | 0.44% | 7.8E-04 | 1.7E-03 | NA | 2.5E-03 |
| **Total PAH HAPs** | | | | | | | **0.031** | **0.044** | **NA** | **0.075** |
| Other semi-volatile HAPs | | | | | | | | | | |
| Phenol | | PM/HAP | --- | Organic PM | 1.18% | 0 | 6.2E-03 | 0 | 0 | 6.2E-03 |

NA = Not Applicable (no AP-42 Emission Factor)

**Methodology**

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]

Specieation 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 |
| **VOC** | | VOC | --- | TOC | 94% | 100% | **5.99** | **18.68** | **1.59** | **26.26** |
| non-VOC/non-HAPS | | | | | | | | | | |
| Methane | 74-82-8 | non-VOC/non-HAP | --- | TOC | 6.50% | 0.26% | 4.1E-01 | 4.9E-02 | 1.1E-01 | 0.573 |
| Acetone | 67-64-1 | non-VOC/non-HAP | --- | TOC | 0.046% | 0.055% | 2.9E-03 | 1.0E-02 | 7.8E-04 | 0.014 |
| Ethylene | 74-85-1 | non-VOC/non-HAP | --- | TOC | 0.71% | 1.10% | 4.5E-02 | 2.1E-01 | 1.2E-02 | 0.263 |
| **Total non-VOC/non-HAPS** | | | | | 7.30% | 1.40% | **0.465** | **0.262** | **0.123** | **0.85** |
| Volatile organic HAPs | | | | | | | | | | |
| Benzene | 71-43-2 | VOC/HAP | --- | TOC | 0.052% | 0.032% | 3.3E-03 | 6.0E-03 | 8.8E-04 | 1.0E-02 |
| Bromomethane | 74-83-9 | VOC/HAP | --- | TOC | 0.0096% | 0.0049% | 6.1E-04 | 9.2E-04 | 1.6E-04 | 1.7E-03 |
| 2-Butanone | 78-93-3 | VOC/HAP | --- | TOC | 0.049% | 0.039% | 3.1E-03 | 7.3E-03 | 8.3E-04 | 1.1E-02 |
| Carbon Disulfide | 75-15-0 | VOC/HAP | --- | TOC | 0.013% | 0.016% | 8.3E-04 | 3.0E-03 | 2.2E-04 | 4.0E-03 |
| Chloroethane | 75-00-3 | VOC/HAP | --- | TOC | 0.00021% | 0.004% | 1.3E-05 | 7.5E-04 | 3.5E-06 | 7.6E-04 |
| Chloromethane | 74-87-3 | VOC/HAP | --- | TOC | 0.015% | 0.023% | 9.6E-04 | 4.3E-03 | 2.5E-04 | 5.5E-03 |
| Cumene | 92-82-8 | VOC/HAP | --- | TOC | 0.11% | 0 | 7.0E-03 | 0 | 1.9E-03 | 8.9E-03 |
| Ethylbenzene | 100-41-4 | VOC/HAP | --- | TOC | 0.28% | 0.038% | 1.8E-02 | 7.1E-03 | 4.7E-03 | 0.030 |
| Formaldehyde | 50-00-0 | VOC/HAP | --- | TOC | 0.088% | 0.69% | 5.6E-03 | 1.3E-01 | 1.5E-03 | 0.136 |
| n-Hexane | 100-54-3 | VOC/HAP | --- | TOC | 0.15% | 0.10% | 9.6E-03 | 1.9E-02 | 2.5E-03 | 0.031 |
| Isooctane | 540-84-1 | VOC/HAP | --- | TOC | 0.0018% | 0.00031% | 1.1E-04 | 5.8E-05 | 3.0E-05 | 2.0E-04 |
| Methylene Chloride | 75-09-2 | non-VOC/HAP | --- | TOC | 0 | 0.00027% | 0 | 5.0E-05 | 0 | 5.0E-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% | 4.7E-04 | 1.0E-03 | 1.2E-04 | 1.6E-03 |
| Tetrachloroethene | 127-18-4 | non-VOC/HAP | --- | TOC | 0.0077% | 0 | 4.9E-04 | 0 | 1.3E-04 | 6.2E-04 |
| Toluene | 100-88-3 | VOC/HAP | --- | TOC | 0.21% | 0.062% | 1.3E-02 | 1.2E-02 | 3.5E-03 | 0.029 |
| 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 | 8.3E-05 | 0 | 2.2E-05 | 1.0E-04 |
| m-/p-Xylene | 1330-20-7 | VOC/HAP | --- | TOC | 0.41% | 0.20% | 2.6E-02 | 3.7E-02 | 6.9E-03 | 0.070 |
| o-Xylene | 95-47-6 | VOC/HAP | --- | TOC | 0.08% | 0.057% | 5.1E-03 | 1.1E-02 | 1.3E-03 | 1.7E-02 |
| **Total volatile organic HAPs** | | | | | 1.50% | 1.30% | **0.096** | **0.243** | **0.025** | **0.364** |

**Methodology**
Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]
Specieation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**
TOC = Total Organic Compounds
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
MTBE = Methyl tert butyl ether

**Appendix A.1: Unlimited Emissions Calculations**
**Material Storage Piles**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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.

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
where Ef = 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 | 2.78 | 1.527 | 0.534 |
| Limestone | 1.6 | 1.85 | 6.89 | 2.329 | 0.815 |
| RAP | 0.5 | 0.58 | 2.75 | 0.290 | 0.102 |
| Gravel | 1.6 | 1.85 | 0 | 0 | 0 |
| Slag | 3.8 | 4.40 | 1.57 | 1.260 | 0.441 |
| Shingles | 3.8 | 4.40 | 0.46 | 0.369 | 0.129 |
| | | | **Totals** | **5.78** | **2.02** |

**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)
**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 - recycled asphalt pavement

**Appendix A.1: Unlimited Emissions Calculations**
**Material Processing, Handling, Crushing, Screening, and Conveying**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Batch or Continuous Drop Operations (AP-42 Section 13.2.4)**
To estimate potential fugitive dust emissions from processing and hangling 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*(0.0032)*[(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 = | 3,066,000 | tons/yr |
| Percent Asphalt Cement/Binder (weight %) = | 5.0% | |
| Maximum Material Handling Throughput = | 2,912,700 | 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 | 3.30 | 1.56 | 0.24 |
| Front-end loader dumping of materials into feeder bins | 3.30 | 1.56 | 0.24 |
| Conveyor dropping material into dryer/mixer or batch tower | 3.30 | 1.56 | 0.24 |
| **Total (tons/yr)** | **9.90** | **4.68** | **0.71** |

**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 additivies
*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 | 7.86 | 3.50 |
| Screening | 0.025 | 0.0087 | 36.41 | 12.67 |
| Conveying | 0.003 | 0.0011 | 4.37 | 1.60 |
| **Unlimited Potential to Emit (tons/yr) =** | | | **48.64** | **17.77** |

**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**
**Unpaved Roads**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**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 = | 3,066,000 | tons/yr |
| Percent Asphalt Cement/Binder (weight %) = | 5.0% | |
| Maximum Material Handling Throughput = | 2,912,700 | tons/yr |
| Maximum Asphalt Cement/Binder Throughput = | 153,300 | tons/yr |
| Maximum No. 2 Fuel Oil Usage = | 6,257,143 | 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 | 1.3E+05 | 5.1E+06 | 300 | 0.057 | 7,388.1 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 17.0 | 0 | 17.0 | 1.3E+05 | 2.2E+06 | 300 | 0.057 | 7,388.1 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 36.0 | 48.0 | 4.3E+03 | 2.0E+05 | 300 | 0.057 | 242.0 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.0 | 4.3E+03 | 5.1E+04 | 300 | 0.057 | 242.0 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 32.0 | 44.0 | 6.6E+02 | 2.9E+04 | 300 | 0.057 | 37.6 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.0 | 6.6E+02 | 7.9E+03 | 300 | 0.057 | 37.6 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 15.0 | 4.2 | 19.2 | 6.9E+05 | 1.3E+07 | 200 | 0.038 | 26,268.9 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 15.0 | 0 | 15.0 | 6.9E+05 | 1.0E+07 | 200 | 0.038 | 26,268.9 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 17.0 | 24.0 | 41.0 | 1.3E+05 | 5.2E+06 | 300 | 0.057 | 7,258.5 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 17.0 | 0 | 17.0 | 1.3E+05 | 2.2E+06 | 300 | 0.057 | 7,258.5 |
| | **Total** | | | | **1.9E+06** | **3.9E+07** | | | **8.2E+04** |

| | | |
|---|---|---|
| Average Vehicle Weight Per Trip = | 20.3 | tons/trip |
| Average Miles Per Trip = | 0.043 | 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) | 22.51 | 5.74 | 0.57 | 14.80 | 3.77 | 0.38 | 7.40 | 1.89 | 0.19 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 22.51 | 5.74 | 0.57 | 14.80 | 3.77 | 0.38 | 7.40 | 1.89 | 0.19 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 0.737 | 0.188 | 0.02 | 0.485 | 0.124 | 0.01 | 0.242 | 0.062 | 0.01 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 0.737 | 0.188 | 0.02 | 0.485 | 0.124 | 0.01 | 0.242 | 0.062 | 0.01 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 0.114 | 0.029 | 0.003 | 0.075 | 0.019 | 0.002 | 0.038 | 0.010 | 0.001 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 0.114 | 0.029 | 0.003 | 0.075 | 0.019 | 0.002 | 0.038 | 0.010 | 0.001 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 80.05 | 20.40 | 2.04 | 52.64 | 13.42 | 1.34 | 26.32 | 6.71 | 0.67 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 80.05 | 20.40 | 2.04 | 52.64 | 13.42 | 1.34 | 26.32 | 6.71 | 0.67 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 22.12 | 5.64 | 0.56 | 14.54 | 3.71 | 0.37 | 7.27 | 1.85 | 0.19 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 22.12 | 5.64 | 0.56 | 14.54 | 3.71 | 0.37 | 7.27 | 1.85 | 0.19 |
| | **Totals** | **251.08** | **63.99** | **6.40** | **165.09** | **42.08** | **4.21** | **82.55** | **21.04** | **2.10** |

**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)
PM2.5 = PM10
PTE = Potential to Emit

**Appendix A: Unlimited Emissions Calculations**
**Paved Roads**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**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 = | 3,066,000 | tons/yr |
| Percent Asphalt Cement/Binder (weight %) = | 5.0% | |
| Maximum Material Handling Throughput = | 2,912,700 | tons/yr |
| Maximum Asphalt Cement/Binder Throughput = | 153,300 | tons/yr |
| Maximum No. 2 Fuel Oil Usage = | 6,257,143 | 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 | 1.3E+05 | 5.1E+06 | 400 | 0.076 | 9850.9 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 17.0 | 0 | 17.00 | 1.3E+05 | 2.2E+06 | 400 | 0.076 | 9850.9 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 36.0 | 48.00 | 4.3E+03 | 2.0E+05 | 500 | 0.095 | 403.3 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.00 | 4.3E+03 | 5.1E+04 | 500 | 0.095 | 403.3 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 32.0 | 44.00 | 6.6E+02 | 2.9E+04 | 500 | 0.095 | 62.6 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.00 | 6.6E+02 | 7.9E+03 | 500 | 0.095 | 62.6 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 15.0 | 4.2 | 19.20 | 6.9E+05 | 1.3E+07 | 300 | 0.057 | 39403.4 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 15.0 | 0 | 15.00 | 6.9E+05 | 1.0E+07 | 300 | 0.057 | 39403.4 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 17.0 | 24.0 | 41.00 | 1.3E+05 | 5.2E+06 | 500 | 0.095 | 12097.5 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 17.0 | 0 | 17.00 | 1.3E+05 | 2.2E+06 | 500 | 0.095 | 12097.5 |
| | **Total** | | | | **1.9E+06** | **3.9E+07** | | | **1.2E+05** |

| | | |
|---|---|---|
| Average Vehicle Weight Per Trip = | 20.3 | tons/trip |
| Average Miles Per Trip = | 0.065 | miles/trip |

Unmitigated Emission Factor, Ef = [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/VMT = 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^2 = Ubitiguous 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 | |
|---|---|---|---|---|
| Unmitigated Emission Factor, Ef = | 0.149 | 0.030 | 0.007 | lb/mile |
| Mitigated Emission Factor, Eext = | 0.136 | 0.027 | 0.007 | 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) | 0.73 | 0.15 | 0.04 | 0.67 | 0.13 | 0.03 | 0.33 | 0.07 | 0.02 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 0.73 | 0.15 | 0.04 | 0.67 | 0.13 | 0.03 | 0.33 | 0.07 | 0.02 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 0.030 | 0.006 | 1.5E-03 | 0.027 | 0.005 | 1.3E-03 | 0.014 | 2.7E-03 | 6.7E-04 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 0.030 | 0.006 | 1.5E-03 | 0.027 | 0.005 | 1.3E-03 | 0.014 | 2.7E-03 | 6.7E-04 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 4.7E-03 | 9.3E-04 | 2.3E-04 | 4.3E-03 | 8.5E-04 | 2.1E-04 | 2.1E-03 | 4.3E-04 | 1.0E-04 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 4.7E-03 | 9.3E-04 | 2.3E-04 | 4.3E-03 | 8.5E-04 | 2.1E-04 | 2.1E-03 | 4.3E-04 | 1.0E-04 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 2.93 | 0.59 | 0.14 | 2.68 | 0.54 | 0.13 | 1.34 | 0.27 | 0.07 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 2.93 | 0.59 | 0.14 | 2.68 | 0.54 | 0.13 | 1.34 | 0.27 | 0.07 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 0.90 | 0.18 | 0.04 | 0.82 | 0.16 | 0.04 | 0.41 | 0.08 | 0.02 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 0.90 | 0.18 | 0.04 | 0.82 | 0.16 | 0.04 | 0.41 | 0.08 | 0.02 |
| | **Totals** | **9.19** | **1.84** | **0.45** | **8.41** | **1.68** | **0.41** | **4.20** | **0.84** | **0.21** |

**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)
PM2.5 = PM10

**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:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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 = | 3,066,000 | tons/yr |
| Percent Asphalt Cement/Binder (weight %) = | 5.0% | |
| Maximum Asphalt Cement/Binder Throughput = | 153,300 | 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% | 38,784.90 | 36,845.66 |
| Cut back asphalt medium cure (assuming kerosene solvent) | 28.6% | 70.0% | 43,843.80 | 30,690.66 |
| Cut back asphalt slow cure (assuming fuel oil solvent) | 20.0% | 25.0% | 30,660.00 | 7,665.00 |
| Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent) | 15.0% | 46.4% | 22,995.00 | 10,669.68 |
| Other asphalt with solvent binder | 25.9% | 2.5% | 39,704.70 | 992.62 |
| | | | **Worst Case PTE of VOC =** | **36,845.66** |

**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 |
| **PTE of Total HAPs (tons/yr) =** | **9,610.71** | |
| **PTE of Single HAP (tons/yr) =** | **3,316.11** | **Xylenes** |

**Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents**

| | | Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents | | | | |
|---|---|---|---|---|---|---|
| Volatile Organic HAP | CAS# | 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% | |
| **Total Organic HAPs** | | **26.08%** | **0.33%** | **1.29%** | **0.68%** | **0.19%** |
| **Worst Single HAP** | | **9.00% Xylenes** | **0.31% Naphthalene** | **0.50% Xylenes** | **0.23% Xylenes** | **0.07% Chrysene** |

**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. Available on the Internet at: http://www.aehs.com/publications/catalog/contents/tph.htm

**Abbreviations**
VOC = Volatile Organic Compounds PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations**
**Gasoline Fuel Transfer and Dispensing Operation**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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:

| | | |
|---|---|---|
| Gasoline Throughput = | 1,300 | gallons/day |
| = | 474.5 | kgal/yr |

**Volatile Organic Compounds**

| Emission Source | Emission Factor (lb/kgal of throughput) | PTE of VOC (tons/yr)* |
|---|---|---|
| Filling storage tank (balanced submerged filling) | 0.3 | 0.07 |
| Tank breathing and emptying | 1.0 | 0.24 |
| Vehicle refueling (displaced losses - controlled) | 1.1 | 0.26 |
| Spillage | 0.7 | 0.17 |
| **Total** | | **0.74** |

**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 |
| **Limited PTE of Total HAPs (tons/yr) =** | **0.19** | |
| **Limited PTE of Single HAP (tons/yr) =** | **0.07** | **Xylenes** |

**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. Available on the Internet at: http://www.aehs.com/publications/catalog/contents/tph.htm

**Abbreviations**
VOC = Volatile Organic Compounds
PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary**
**Entire Source**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Asphalt Plant Limitations**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr | | | | | | | | |
| Annual Asphalt Production Limitation = | 700,000 | ton/yr | | | | | | | | |
| Blast Furnace Slag Usage Limitation = | 67,500 | ton/yr | 1.10 | % sulfur | | | | | | |
| Steel Slag Usage = | 700,000 | | 0.66 | % sulfur | | | | | | |
| Natural Gas Limitation = | 494 | MMCF/yr | | | | | | | | |
| No. 2 Fuel Oil Limitation = | 864,007 | gal/yr, and | 0.50 | % sulfur | | | | | | |
| No. 4 Fuel Oil Limitation = | 0 | gal/yr, and | 0 | % sulfur | | | | | | |
| Refinery Blend / Residual (No. 4, No. 5, or No. 6) Fuel Oil Limitation = | 520,973 | gal/yr, and | 0.75 | % sulfur | | | | | | |
| Propane Limitation = | 0 | gal/yr, and | 0 | gr/100 ft3 sulfur | | | | | | |
| Butane Limitation = | 0 | gal/yr, and | 0 | gr/100 ft3 sulfur | | | | | | |
| Used/Waste Oil Limitation = | 417,310 | gal/yr, and | 1.00 | % sulfur | 1.00 | % ash | 0.200 | % chlorine, | 0.010 | % lead |
| Diesel Fuel Oil Limitation = | 5,000 | gal/yr, and | 0.50 | % sulfur | | | | | | |
| PM Dryer/Mixer Limitation = | 0.246 | lb/ton of asphalt production | | | | | | | | |
| PM10 Dryer/Mixer Limitation = | 0.105 | lb/ton of asphalt production | | | | | | | | |
| PM2.5 Dryer/Mixer Limitation = | 0.120 | 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 = | 0.540 | lb/ton of slag processed | | | | | | | | |
| Steel Slag SO2 Dryer/Mixer Limitation = | 0.0014 | lb/ton of slag processed | | | | | | | | |
| Cold Mix Asphalt VOC Usage Limitation = | 31.11 | tons/yr | | | | | | | | |
| HCl Limitation = | 13.20 | lb/kgal | | | | | | | | |

**Limited/Controlled Emissions**

| | Limited/Controlled Potential Emissions (tons/year) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Criteria Pollutants | | | | | | | | Hazardous Air Pollutants | | |
| **Process Description** | **PM** | **PM10** | **PM2.5** | **SO2** | **NOx** | **VOC** | **CO** | **GHGs as CO2e** | **Total HAPs** | **Worst Case HAP** | |
| **Ducted Emissions** | | | | | | | | | | | |
| Dryer Fuel Combustion (worst case) | 13.35 | 10.64 | 10.64 | 30.67 | 46.92 | 1.36 | 20.74 | 29,855.11 | 3.42 | 2.75 | (hydrogen chloride) |
| Dryer/Mixer (Process) | 86.12 | 36.62 | 41.85 | 20.30 | 19.25 | 11.20 | 45.50 | 11,638.20 | 3.73 | 1.09 | (formaldehyde) |
| Dryer/Mixer Slag Processing (worst case) | 0 | 0 | 0 | 18.23 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Hot Oil Heater Fuel Combustion (worst case) | 0.01 | 0.04 | 0.04 | 3.42E-03 | 0.57 | 0.03 | 0.48 | 688.38 | 0.011 | 0.010 | (hexane) |
| Crusher Fuel Combustion | 0.11 | 0.11 | 0.11 | 0.10 | 1.51 | 0.12 | 0.33 | 56.37 | 1.33E-03 | 4.04E-04 | (formaldehyde) |
| **Worst Case Emissions*** | **86.24** | **36.77** | **42.00** | **49.00** | **49.00** | **11.35** | **46.30** | **30,599.86** | **3.74** | **2.75** | (hydrogen chloride) |
| **Fugitive Emissions** | | | | | | | | | | | |
| Asphalt Load-Out, Silo Filling, On-Site Yard | 0.39 | 0.39 | 0.39 | 0 | 0 | 6.00 | 1.01 | 0 | 0.10 | 0.03 | (formaldehyde) |
| Material Storage Piles | 5.78 | 2.02 | 2.02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Material Processing and Handling | 2.26 | 1.07 | 0.16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Material Crushing, Screening, and Conveying | 11.11 | 4.06 | 4.06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Unpaved and Paved Roads (worst case) | 18.84 | 4.80 | 0.48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Cold Mix Asphalt Production | 0 | 0 | 0 | 0 | 0 | 31.11 | 0 | 0 | 8.12 | 2.80 | (xylenes) |
| Gasoline Fuel Transfer and Dispensing | 0 | 0 | 0 | 0 | 0 | 0.74 | 0 | 0 | 0.19 | 0.07 | (xylenes) |
| Volatile Organic Liquid Storage Vessels | 0 | 0 | 0 | 0 | 0 | negl | 0 | 0 | negl | negl | |
| **Total Fugitive Emissions** | **38.37** | **12.34** | **7.11** | **0** | **0** | **37.84** | **1.01** | **0** | **8.41** | **2.87** | (xylenes) |
| **Totals Limited/Controlled Emissions** | **124.61** | **49.11** | **49.11** | **49.00** | **49.00** | **49.20** | **47.31** | **30,599.86** | **12.15** | **2.87** | (xylenes) |

negl = negligible
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
Fuel component percentages provided by the source.

**Appendix A.2: Limited Emissions Calculations**
**Dryer/Mixer Fuel Combustion with Maximum Capacity ≥ 100 MMBtu/hr**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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.

**Production and Fuel Limitations**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr | | | | | | | | |
| Annual Asphalt Production Limitation = | 700,000 | ton/yr | | | | | | | | |
| Natural Gas Limitation = | 494 | MMCF/yr | | | | | | | | |
| No. 2 Fuel Oil Limitation = | 864,007 | gal/yr, and | 0.50 | % sulfur | | | | | | |
| No. 4 Fuel Oil Limitation = | 0 | gal/yr, and | 0 | % sulfur | | | | | | |
| Refinery Blend / Residual (No. 4, No. 5, or No. 6) Fuel Oil Limitation = | 520,973 | gal/yr, and | 0.75 | % sulfur | | | | | | |
| Propane Limitation = | 0 | gal/yr, and | 0 | gr/100 ft3 sulfur | | | | | | |
| Butane Limitation = | 0 | gal/yr, and | 0 | gr/100 ft3 sulfur | | | | | | |
| Used/Waste Oil Limitation = | 417,310 | gal/yr, and | 1.00 | % sulfur | 1.00 | % ash | 0.200 | % chlorine, | 0.010 | % lead |

**Limited Emissions**

| | Emission Factor (units) | | | | | | | Limited Potential to Emit (tons/yr) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Criteria Pollutant | Natural Gas (lb/MMCF) | No. 2 Fuel Oil (lb/kgal) | No. 4 Fuel Oil* (lb/kgal) | Refinery Blend / Residual (No. 4, 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) | Refinery Blend / Residual (No. 4, 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 | 7 | 10.1125 | 0.5 | 0.6 | 64 | 0.47 | 0.86 | 0 | 2.63 | 0 | 0 | 13.35 | **13.35** |
| PM10 | 7.6 | 3.3 | 8.3 | 11.6125 | 0.5 | 0.6 | 51 | 1.88 | 1.43 | 0 | 3.02 | 0 | 0 | 10.64 | **10.64** |
| SO2 | 0.6 | 71.0 | 0 | 117.8 | 0 | 0 | 147.0 | 0.15 | 30.67 | 0 | 30.67 | 0 | 0 | 30.67 | **30.67** |
| NOx | 190 | 24.0 | 47.0 | 47.0 | 13.0 | 15.0 | 19.0 | 46.92 | 10.37 | 0 | 12.24 | 0 | 0 | 3.96 | **46.92** |
| VOC | 5.5 | 0.20 | 0.20 | 0.28 | 1.00 | 1.10 | 1.0 | 1.36 | 0.09 | 0 | 0.07 | 0 | 0 | 0.21 | **1.36** |
| CO | 84 | 5.0 | 5.0 | 5.0 | 7.5 | 8.4 | 5.0 | 20.74 | 2.16 | 0 | 1.30 | 0 | 0 | 1.04 | **20.74** |
| Hazardous Air Pollutant | | | | | | | | | | | | | | | |
| HCl | | | | | | | 13.2 | | | | | | | 2.75 | **2.75** |
| Antimony | | | 5.25E-03 | 5.25E-03 | | | negl | | | 0 | 1.37E-03 | | | negl | **1.4E-03** |
| Arsenic | 2.0E-04 | 5.6E-04 | 1.32E-03 | 1.32E-03 | | | 1.1E-01 | 4.9E-05 | 2.42E-04 | 0 | 3.44E-04 | | | 2.30E-02 | **2.3E-02** |
| Beryllium | 1.2E-05 | 4.2E-04 | 2.78E-05 | 2.78E-05 | | | negl | 3.0E-06 | 1.81E-04 | 0 | 7.24E-06 | | | negl | **1.8E-04** |
| Cadmium | 1.1E-03 | 4.2E-04 | 3.98E-04 | 3.98E-04 | | | 9.3E-03 | 2.7E-04 | 1.81E-04 | 0 | 1.04E-04 | | | 1.94E-03 | **1.9E-03** |
| Chromium | 1.4E-03 | 4.2E-04 | 8.45E-04 | 8.45E-04 | | | 2.0E-02 | 3.5E-04 | 1.81E-04 | 0 | 2.20E-04 | | | 4.17E-03 | **4.2E-03** |
| Cobalt | 8.4E-05 | | 6.02E-03 | 6.02E-03 | | | 2.1E-04 | 2.1E-05 | | 0 | 1.57E-03 | | | 4.38E-05 | **1.6E-03** |
| Lead | 5.0E-04 | 1.3E-03 | 1.51E-03 | 1.51E-03 | | | 0.55 | 1.2E-04 | 5.44E-04 | 0 | 3.93E-04 | | | 1.1E-01 | **0.11** |
| Manganese | 3.8E-04 | 8.4E-04 | 3.00E-03 | 3.00E-03 | | | 6.8E-02 | 9.4E-05 | 3.63E-04 | 0 | 7.81E-04 | | | 1.42E-02 | **0.01** |
| Mercury | 2.6E-04 | 4.2E-04 | 1.13E-04 | 1.13E-04 | | | | 6.4E-05 | 1.81E-04 | 0 | 2.94E-05 | | | | **1.8E-04** |
| Nickel | 2.1E-03 | 4.2E-04 | 8.45E-02 | 8.45E-02 | | | 1.1E-02 | 5.2E-04 | 1.81E-04 | 0 | 2.20E-02 | | | 2.30E-03 | **0.022** |
| Selenium | 2.4E-05 | 2.1E-03 | 6.83E-04 | 6.83E-04 | | | negl | 5.9E-06 | 9.07E-04 | 0 | 1.78E-04 | | | negl | **9.1E-04** |
| 1.1.1-Trichloroethane | | | 2.36E-04 | 2.36E-04 | | | | | | 0 | 6.15E-05 | | | | **6.1E-05** |
| 1,3-Butadiene | | | | | | | | | | | | | | | **0.0E+00** |
| Acetaldehyde | | | | | | | | | | | | | | | **0.0E+00** |
| Acrolein | | | | | | | | | | | | | | | **0.0E+00** |
| Benzene | 2.1E-03 | | 2.14E-04 | 2.14E-04 | | | | 5.2E-04 | | 0 | 5.57E-05 | | | | **5.2E-04** |
| Bis(2-ethylhexyl)phthalate | | | | | | | 2.2E-03 | | | | | | | 4.59E-04 | **4.6E-04** |
| Dichlorobenzene | 1.2E-03 | | | | | | 8.0E-07 | 3.0E-04 | | | | | | 1.67E-07 | **3.0E-04** |
| Ethylbenzene | | | 6.36E-05 | 6.36E-05 | | | | | | 0 | 1.66E-05 | | | | **1.7E-05** |
| Formaldehyde | 7.5E-02 | 6.10E-02 | 3.30E-02 | 3.30E-02 | | | | 1.9E-02 | 2.64E-02 | 0 | 8.60E-03 | | | | **0.026** |
| Hexane | 1.8E+00 | | | | | | | 0.44 | | | | | | | **0.445** |
| Phenol | | | | | | | 2.4E-03 | | | | | | | 5.01E-04 | **5.0E-04** |
| Toluene | 3.4E-03 | | 6.20E-03 | 6.20E-03 | | | | 8.4E-04 | | 0 | 1.62E-03 | | | | **1.6E-03** |
| Total PAH Haps | negl | | 1.13E-03 | 1.13E-03 | | | 3.9E-02 | negl | | 0 | 2.94E-04 | | | 8.16E-03 | **8.2E-03** |
| Polycyclic Organic Matter | | 3.30E-03 | | | | | | | 1.43E-03 | | | | | | **1.4E-03** |
| Xylene | | | 1.09E-04 | 1.09E-04 | | | | | | 0 | 2.84E-05 | | | | **2.8E-05** |
| | | | | | | | **Total HAPs** | **0.47** | **0.03** | **0** | **0.04** | **0** | **0** | **2.92** | **3.42** |

**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 9/98), 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)
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 Calculations**
**Greenhouse Gas (CO2e) Emissions from the**
**Dryer/Mixer Fuel Combustion with Maximum Capacity ≥ 100 MMBtu/hr**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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.

**Production and Fuel Limitations**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr | | | | | | | | |
| Annual Asphalt Production Limitation = | 700,000 | ton/yr | | | | | | | | |
| Natural Gas Limitation = | 494 | MMCF/yr | | | | | | | | |
| No. 2 Fuel Oil Limitation = | 864,007 | gal/yr, and | 0.50 | % sulfur | | | | | | |
| No. 4 Fuel Oil Limitation = | 0 | gal/yr, and | 0 | % sulfur | | | | | | |
| Refinery Blend / Residual (No. 4, No. 5, or No. 6) Fuel Oil Limitation = | 520,973 | gal/yr, and | 0.75 | % sulfur | | | | | | |
| Propane Limitation = | 0 | gal/yr, and | 0 | gr/100 ft3 sulfur | | | | | | |
| Butane Limitation = | 0 | gal/yr, and | 0 | gr/100 ft3 sulfur | | | | | | |
| Used/Waste Oil Limitation = | 417,310 | gal/yr, and | 1.00 | % sulfur | 1.00 | % ash | 0.200 | % chlorine, | 0.010 | % lead |

**Limited Emissions**

| | Emission Factor (units) | | | | | | | Greenhouse Warming Potentials (GWP) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CO2e Fraction | Natural Gas (lb/MMCF) | No. 2 Fuel Oil (lb/kgal) | No. 4 Fuel Oil (lb/kgal) | Refinery Blend / Residual (No.4, No. 5, or No. 6) Fuel Oil (lb/kgal) | Propane (lb/kgal) | Butane (lb/kgal) | Used/Waste Oil (lb/kgal) | Name | Chemical Formula | Global warming potential |
| CO2 | 120,161.84 | 22,501.41 | 24,153.46 | 24,835.04 | 12,500.00 | 14,506.73 | 22,024.15 | Carbon dioxide | $CO_2$ | 1 |
| CH4 | 2.49 | 0.91 | 0.97 | 1.00 | 0.60 | 0.67 | 0.89 | Methane | $CH_4$ | 21 |
| N2O | 2.20 | 0.26 | 0.19 | 0.53 | 0.90 | 0.90 | 0.18 | Nitrous oxide | $N_2O$ | 310 |

| | Limited Potential to Emit (tons/yr) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CO2e Fraction | Natural Gas (tons/yr) | No. 2 Fuel Oil (tons/yr) | No. 4 Fuel Oil (tons/yr) | Refinery Blend / Residual (No. 4, No. 5, or No. 6) Fuel Oil (tons/yr) | Propane (tons/yr) | Butane (tons/yr) | Used/Waste Oil (tons/yr) | **CO2e for Worst Case Fuel* (tons/yr)** |
| CO2 | 29,673.76 | 9,720.69 | 0 | 6,469 | 0 | 0 | 4,595.45 | **29,855.11** |
| CH4 | 0.62 | 0.39 | 0 | 0 | 0 | 0 | 0.19 | |
| N2O | 0.54 | 0.11 | 0 | 0 | 0 | 0 | 0.04 | |
| Total | 29,674.92 | 9,721.20 | 0 | 6,470 | 0 | 0 | 4,595.67 | |
| CO2e Equivalent Emissions (tons/yr) | 29,855.11 | 9,763.79 | 0 | 6,517 | 0 | 0 | 4,611.00 | **Natural Gas** |

**Methodology**
Fuel Limitations from TSD Appendix A.2, page 1 of 15.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2 Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 9/98), Table 1.3-8

No.4 Fuel Oil: Emission Factors for CO2, CH4, and N2O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Refinery Blend / Residual (No. 5 or No. 6) Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 9/98), Table 1.3-8

Propane and Butane: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Waste Oil: Emission Factors for CO2, CH4, and N2O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

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)
Limited CO2e Emissions (tons/yr) = CO2 Potential Emission of "worst case" fuel (ton/yr) x CO2 GWP (1) + CH4 Potential Emission of "worst case" fuel (ton/yr) x CH4 GWP (21) + N2O Potential Emission of "worst case" fuel (ton/yr) x N2O GWP (310).

**Abbreviations**
CH4 = Methane CO2 = Carbon Dioxide N2O = Nitrogen Dioxide PTE = Potential to Emit

**Appendix A.2: Limited Emissions Calculations**
**Dryer/Mixer**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

The following calculations determine the limited emissions from the aggregate drying/mixing

| | | |
|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr |
| Annual Asphalt Production Limitation = | 700,000 | ton/yr |
| PM Dryer/Mixer Limitation = | 0.246 | lb/ton of asphalt production |
| PM10 Dryer/Mixer Limitation = | 0.105 | lb/ton of asphalt production |
| PM2.5 Dryer/Mixer Limitation = | 0.120 | lb/ton of asphalt production |
| CO Dryer/Mixer Limitation = | 0.130 | lb/ton of asphalt production |
| VOC Dryer/Mixer Limitation = | 0.032 | lb/ton of asphalt production |

| | Emission Factor or Limitation (lb/ton) Drum-Mix Plant (dryer/mixer, controlled by fabric filter) | | | Limited/Controlled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer, controlled by fabric filter) | | | |
|---|---|---|---|---|---|---|---|
| Criteria Pollutant | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | **Worse Case PTE** |
| PM* | 0.246 | 0.246 | 0.246 | 86.1 | 86.1 | 86.1 | **86.1** |
| PM10* | 0.105 | 0.105 | 0.105 | 36.6 | 36.6 | 36.6 | **36.6** |
| PM2.5* | 0.120 | 0.120 | 0.120 | 41.8 | 41.8 | 41.8 | **41.8** |
| SO2** | 0.003 | 0.011 | 0.058 | 1.2 | 3.9 | 20.3 | **20.3** |
| NOx** | 0.026 | 0.055 | 0.055 | 9.1 | 19.3 | 19.3 | **19.3** |
| VOC** | 0.032 | 0.032 | 0.032 | 11.2 | 11.2 | 11.2 | **11.2** |
| CO*** | 0.130 | 0.130 | 0.130 | 45.5 | 45.5 | 45.5 | **45.5** |
| Hazardous Air Pollutant | | | | | | | |
| HCl | | | 2.10E-04 | | | 0.07 | **0.07** |
| Antimony | 1.80E-07 | 1.80E-07 | 1.80E-07 | 6.30E-05 | 6.30E-05 | 6.30E-05 | **6.30E-05** |
| Arsenic | 5.60E-07 | 5.60E-07 | 5.60E-07 | 1.96E-04 | 1.96E-04 | 1.96E-04 | **1.96E-04** |
| Beryllium | negl | negl | negl | negl | negl | negl | **0** |
| Cadmium | 4.10E-07 | 4.10E-07 | 4.10E-07 | 1.44E-04 | 1.44E-04 | 1.44E-04 | **1.44E-04** |
| Chromium | 5.50E-06 | 5.50E-06 | 5.50E-06 | 1.93E-03 | 1.93E-03 | 1.93E-03 | **1.93E-03** |
| Cobalt | 2.60E-08 | 2.60E-08 | 2.60E-08 | 9.10E-06 | 9.10E-06 | 9.10E-06 | **9.10E-06** |
| Lead | 6.20E-07 | 1.50E-05 | 1.50E-05 | 2.17E-04 | 5.25E-03 | 5.25E-03 | **5.25E-03** |
| Manganese | 7.70E-06 | 7.70E-06 | 7.70E-06 | 2.70E-03 | 2.70E-03 | 2.70E-03 | **2.70E-03** |
| Mercury | 2.40E-07 | 2.60E-06 | 2.60E-06 | 8.40E-05 | 9.10E-04 | 9.10E-04 | **9.10E-04** |
| Nickel | 6.30E-05 | 6.30E-05 | 6.30E-05 | 2.21E-02 | 2.21E-02 | 2.21E-02 | **2.21E-02** |
| Selenium | 3.50E-07 | 3.50E-07 | 3.50E-07 | 1.23E-04 | 1.23E-04 | 1.23E-04 | **1.23E-04** |
| 2,2,4 Trimethylpentane | 4.00E-05 | 4.00E-05 | 4.00E-05 | 1.40E-02 | 1.40E-02 | 1.40E-02 | **1.40E-02** |
| Acetaldehyde | | | 1.30E-03 | | | 0.46 | **0.46** |
| Acrolein | | | 2.60E-05 | | | 9.10E-03 | **9.10E-03** |
| Benzene | 3.90E-04 | 3.90E-04 | 3.90E-04 | 0.14 | 0.14 | 0.14 | **0.14** |
| Ethylbenzene | 2.40E-04 | 2.40E-04 | 2.40E-04 | 0.08 | 0.08 | 0.08 | **0.08** |
| Formaldehyde | 3.10E-03 | 3.10E-03 | 3.10E-03 | 1.09 | 1.09 | 1.09 | **1.09** |
| Hexane | 9.20E-04 | 9.20E-04 | 9.20E-04 | 0.32 | 0.32 | 0.32 | **0.32** |
| 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 | | | 0.05 | **0.05** |
| Quinone | | | 1.60E-04 | | | 0.06 | **0.06** |
| Toluene | 1.50E-04 | 2.90E-03 | 2.90E-03 | 0.05 | 1.02 | 1.02 | **1.02** |
| Total PAH Haps | 1.90E-04 | 8.80E-04 | 8.80E-04 | 0.07 | 0.31 | 0.31 | **0.31** |
| Xylene | 2.00E-04 | 2.00E-04 | 2.00E-04 | 0.07 | 0.07 | 0.07 | **0.07** |
| | | | | | | **Total HAPs** | **3.73** |
| | | | | | | **Worst Single HAP** | **1.085 (formaldehyde)** |

**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**
VOC - Volatile Organic Compounds
HCl = Hydrogen Chloride
SO2 = Sulfur Dioxide
HAP = Hazardous Air Pollutant
PAH = Polyaromatic Hydrocarbon

**Appendix A.2: Limited Emissions Calculations**
**Greenhouse Gas (CO2e) Emissions from the**
**Drum-Mix Plant (Dryer/Mixer) Process Emissions**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

The following calculations determine the limited emissions from the aggregate drying/mixing

| | | |
|---|---|---|
| Maximum Hourly Asphalt Production = | 350 | ton/hr |
| Annual Asphalt Production Limitation = | 700,000 | ton/yr |

| Criteria Pollutant | Emission Factor or Limitation (lb/ton) Drum-Mix Plant (dryer/mixer, controlled by fabric filter) | | | Greenhouse Gas Global Warming Potentials (GWP) | Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer, controlled by fabric filter) | | | **CO2e for Worst Case Fuel (tons/yr)** |
|---|---|---|---|---|---|---|---|---|
| | Natural Gas | No. 2 Fuel Oil | Waste Oil | | Natural Gas | No. 2 Fuel Oil | Waste Oil | |
| CO2 | 33 | 33 | 33 | 1 | 11,550.00 | 11,550.00 | 11,550.00 | **11,638.20** |
| CH4 | 0.0120 | 0.0120 | 0.0120 | 21 | 4.20 | 4.20 | 4.20 | |
| N2O | | | | 310 | 0 | 0 | 0 | |
| | | | | Total | 11,554.20 | 11,554.20 | 11,554.20 | |
| | | | | CO2e Equivalent Emissions (tons/yr) | 11,638.20 | 11,638.20 | 11,638.20 | |

**Methodology**

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N20 available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

Limited/Controlled Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

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.
Limited CO2e Emissions (tons/yr) = CO2 Potential Emission of "worst case" fuel (ton/yr) x CO2 GWP (1) + CH4 Potential Emission of "worst case" fuel (ton/yr) x CH4 GWP (21) + N2O Potential Emission of "worst case" fuel (ton/yr) x N2O GWP (310).

**Abbreviations**

CO2 = Carbon Dioxide CH4 = Methane N2O = Nitrogen Dioxide PTE = Potential to Emit

**Appendix A.2: Limited Emissions Calculations**
**Dryer/Mixer Slag Processing**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

The following calculations determine the limited emissions from the processing of slag in the aggregate drying/mixing

| | | | | |
|---|---|---|---|---|
| Blast Furnace Slag Usage Limitation = | 67,500 | ton/yr | 1.10 | % sulfur |
| Blast Furnace Slag SO2 Dryer/Mixer Limitation[1] = | 0.540 | lb/ton of slag processed | | |
| Steel Slag Usage[α] = | 700,000 | | 0.66 | % sulfur |
| Steel Slag SO2 Dryer/Mixer Limitation[2] = | 0.0014 | lb/ton of slag processed | | |

| Slag Type | Emission Factor or Limitation (lb/ton)* | Limited Potential to Emit (tons/yr) |
|---|---|---|
| Blast Furnace Slag | 0.54 | 18.23 |
| Steel Slag | 0.0014 | 0.49 |

**Methodology**

[1] 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.

[2] 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) = (Slag Usage Limitation (ton/yr)] * [Limited Emission Factor (lb/ton)] * [ton/2000 lbs]

**Notes**

[α] A Steel slag usage limit is not required for the source to comply with their FESOP SO2 Limit, since unlimited usage results in a PTE SO2 of 0.90 tons/yr (see TSD Appendix A, page 6 of 19). To form a conservative estimate, SO2 emissions are based on the "worst case" assumption that steel slag usage corresponds to 100% of the aggregate used to produce the hot-mix asphalt.

**Abbreviations**

SO2 = Sulfur Dioxide

**Appendix A.2: Limited Emissions Calculations**
**Hot Oil Heater**
**Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

| | | | | |
|---|---|---|---|---|
| Maximum Hot Oil Heater Fuel Input Rate = | 1.30 | MMBtu/hr | | |
| Natural Gas Usage = | 11 | MMCF/yr | | |
| No. 2 Fuel Oil Usage = | 0 | gal/yr, and | 0.50 | % sulfur |

**Unlimited/Uncontrolled Emissions**

| | Emission Factor (units) | | Unlimited/Uncontrolled Potential to Emit (tons/yr) | | |
|---|---|---|---|---|---|
| | Hot Oil Heater | | Hot Oil Heater | | |
| Criteria Pollutant | Natural Gas (lb/MMCF) | No. 2 Fuel Oil (lb/kgal) | Natural Gas (tons/yr) | No. 2 Fuel Oil (tons/yr) | **Worse Case Fuel (tons/yr)** |
| PM | 1.9 | 2.0 | 0.011 | 0 | **0.01** |
| PM10/PM2.5 | 7.6 | 3.3 | 0.043 | 0 | **0.04** |
| SO2 | 0.6 | 71.0 | 0.003 | 0 | **3.42E-03** |
| NOx | 100 | 20.0 | 0.569 | 0 | **0.57** |
| VOC | 5.5 | 0.20 | 0.031 | 0 | **0.03** |
| CO | 84 | 5.0 | 0.478 | 0 | **0.48** |
| Hazardous Air Pollutant | | | | | |
| Arsenic | 2.0E-04 | 5.6E-04 | 1.1E-06 | 0 | **1.1E-06** |
| Beryllium | 1.2E-05 | 4.2E-04 | 6.8E-08 | 0 | **6.8E-08** |
| Cadmium | 1.1E-03 | 4.2E-04 | 6.3E-06 | 0 | **6.3E-06** |
| Chromium | 1.4E-03 | 4.2E-04 | 8.0E-06 | 0 | **8.0E-06** |
| Cobalt | 8.4E-05 | | 4.8E-07 | | **4.8E-07** |
| Lead | 5.0E-04 | 1.3E-03 | 2.8E-06 | 0 | **2.8E-06** |
| Manganese | 3.8E-04 | 8.4E-04 | 2.2E-06 | 0 | **2.2E-06** |
| Mercury | 2.6E-04 | 4.2E-04 | 1.5E-06 | 0 | **1.5E-06** |
| Nickel | 2.1E-03 | 4.2E-04 | 1.2E-05 | 0 | **1.2E-05** |
| Selenium | 2.4E-05 | 2.1E-03 | 1.4E-07 | 0 | **1.4E-07** |
| Benzene | 2.1E-03 | | 1.2E-05 | | **1.2E-05** |
| Dichlorobenzene | 1.2E-03 | | 6.8E-06 | | **6.8E-06** |
| Ethylbenzene | | | | | **0** |
| Formaldehyde | 7.5E-02 | 6.10E-02 | 4.3E-04 | 0 | **4.27E-04** |
| 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 | | 0 | **0** |
| | | **Total HAPs =** | **1.1E-02** | **0** | **0.011** |

**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

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] *

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 9/98), 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)
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 Calculations**
**Greenhouse Gas (CO2e) Emissions from**
**Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**
**from the Hot oil Heating System**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

| | | | | |
|---|---|---|---|---|
| Maximum Hot Oil Heater Fuel Input Rate = | 1.30 | MMBtu/hr | | |
| Natural Gas Usage = | 11 | MMCF/yr | | |
| No. 2 Fuel Oil Usage = | 0 | gal/yr, | 0.50 | % sulfur |

**Unlimited/Uncontrolled Emissions**

| Criteria Pollutant | Emission Factor (units) Natural Gas (lb/MMCF) | Emission Factor (units) No. 2 Fuel Oil (lb/kgal) | Greenhouse Gas Global Warming Potentials (GWP) | Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr) | Unlimited/Uncontrolled Potential to Emit (tons/yr) No. 2 Fuel Oil (tons/yr) | Worse Case CO2e Emissions (tons/yr) |
|---|---|---|---|---|---|---|
| CO2 | 120,161.84 | 22,501.41 | 1 | 684.20 | 0 | 688.38 |
| CH4 | 2.49 | 0.91 | 21 | 0.014 | 0 | |
| N2O | 2.20 | 0.26 | 310 | 0.013 | 0 | |
| | | | Total | 684.23 | 0 | |

| | | |
|---|---|---|
| CO2e Equivalent Emissions (tons/yr) | 688.38 | 0 |

**Methodology**

Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas : Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2 Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 9/98), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

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)] *

Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (310).

**Abbreviations**

CH4 = Methane
CO2 = Carbon Dioxide
N2O = Nitrogen Dioxide
PTE = Potential to Emit

**Appendix A.2: Limited Emissions Calculations**
**Reciprocating Internal Combustion Engines**
**Diesel Fuel-fired Portable Crusher**
**Output Rating (<= 600 HP)**
**Maximum Input Rate (<= 4.2 MMBtu/hr)**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Emissions calculated based on output rating (hp)**

| | | | | |
|---|---|---|---|---|
| Output Horsepower Rating (hp) | 300.0 | | | |
| Maximum Operating Hours per Year | 8760 | | | |
| Potential Throughput (hp-hr/yr) | 2,628,000 | | | |
| Diesel Engine Oil Usage Limitation = | 5,000 | gal/yr, and | 0.50 | % sulfur |

| | Criteria Pollutants | | | | | | |
|---|---|---|---|---|---|---|---|
| | PM* | PM10* | PM2.5* | SO2 | NOx | VOC | CO |
| Emission Factor in lb/kgal | 42.47 | 42.47 | 42.47 | 39.73 | 604.17 | 49.32 | 130.15 |
| Potential Emission in tons/yr | 0.11 | 0.11 | 0.11 | 0.10 | 1.51 | 0.12 | 0.33 |

*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) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Benzene | Toluene | Xylene | 1,3-Butadiene | Formaldehyde | Acetaldehyde | Acrolein | Total PAH HAPs*** |
| Emission Factor in lb/kgal**** | 1.28E-01 | 5.60E-02 | 3.90E-02 | 5.36E-03 | 1.62E-01 | 1.05E-01 | 1.27E-02 | 2.30E-02 |
| Potential Emission in tons/yr | 3.20E-04 | 1.40E-04 | 9.76E-05 | 1.34E-05 | **4.04E-04** | 2.63E-04 | 3.17E-05 | 5.75E-05 |

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/MMBtu were converted to lb/kgal using the heating value of diesel fuel oil (137,000 Btu/gal) as taken from AP 42 Appendix A (09/85), page A-5.

| | |
|---|---|
| **Potential Emission of Total Combined HAPs (tons/yr)** | **1.33E-03** |

**Notes**
Constant: 1 kilogallon (kgal) = 1000 gallons (gal)
The heating value of Diesel fuel oil is 137,000 Btu/gal as taken from AP 42 Appendix A (09/85), page A-5.
Emission Factors for Diesel Fuel Oil combustion are from AP 42 - 3.3 Gasoline and Diesel Industrial Engines (Supplement B 10/96), Tables 3.3-1 and 3.3-2

**Methodology**
Potential Throughput (hp-hr/yr) = Output Horsepower Rating (hp) * Maximum Operating Hours per Year

Diesel Engine Oil Usage (gal/yr) = [(Potential Throughput (hp-hr/yr) * average brake specific fuel consumption of 7,000 Btu/hp-hr) / 137,000 Btu/gal]

Limited Potential to Emit (tons/yr) = Diesel Engine Oil Usage (gal/yr)) * Emission Factor (lb/kgal)) / (1000 gal/kgal * 2,000 lb/ton)]

**ATSD Appendix A.2: Limited Emissions Summary**
**Greenhouse Gas (CO2e) Emissions from the**
**Diesel Fuel-fired Portable Crusher**
**Reciprocating Internal Combustion Engines**
**Output Rating (<= 600 HP)**
**Maximum Input Rate (<= 4.2 MMBtu/hr)**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

Emissions calculated based on output rating (hp)

| | | | | |
|---|---|---|---|---|
| Output Horsepower Rating (hp) | 300.0 | | | |
| Maximum Operating Hours per Year | 8760 | | | |
| Potential Throughput (hp-hr/yr) | 2,628,000 | | | |
| Diesel Engine Oil Usage = | 5,000 | gal/yr, and | 0.50 | % sulfur |

| Greenhouse Warming Potentials (GWP) | | |
|---|---|---|
| Name | Chemical Formula | Global warming potential |
| Carbon dioxide | $CO_2$ | 1 |
| Methane | $CH_4$ | 21 |
| Nitrous oxide | $N_2O$ | 310 |

| | Limited Potential to Emit (tons/yr) | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/kgal | 22,472.92 | 0.91 | 0.18 |
| Potential Emission in tons/yr | 56.18 | 2.28E-03 | 4.50E-04 |
| Summed Potential Emissions in tons/yr | 56.19 | | |
| CO2e Equivalent Emissions (tons/yr) * | 56.37 | | |

**Notes**
Constant: 1 kilogallon (kgal) = 1000 gallons (gal)
The heating value of Diesel fuel oil is 137,000 Btu/gal as taken from AP 42 Appendix A (09/85), page A-5.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Diesel Engine Oil: Emission Factor for CO2 from AP-42 Chapter 3.3 (dated 10/96), Table 3.3-1, has been converted from lb/MMBtu to lb/kgal. Emission Factors for CH4 and N2O from 40 CFR Part 98 Subpart C, Table C-2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversion

for CO2: EF (lb/kgal) = [EF (lb/MMbtu) x average heating value of diesel (19,300 Btu/lb) x Conversion Factor (1/1,000,000 MMBtu/Btu) x density of diesel (7.1 lb/gal) x Conversion Factor (1,000 gal/kgal)

for CH4 & N2O: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

**Methodology**
Potential Throughput (hp-hr/yr) = Output Horsepower Rating (hp) * Maximum Operating Hours per Year
Diesel Engine Oil Usage (gal/yr) = [(Potential Throughput (hp-hr/yr) * average brake specific fuel consumption of 7,000 Btu/hp-hr) / 137,000 Btu/gal]
Limited Potential to Emit (tons/yr) = [Diesel Engine Oil Usage (gal/yr)) * Emission Factor (lb/kgal)) / (1000 gal/kgal * 2,000 lb/ton)] * Global Warming Potential
Limited CO2e Emissions (tons/yr) = CO2 Potential Emission (ton/yr) x CO2 GWP (1) + CH4 Potential Emission (ton/yr) x CH4 GWP (21) + N2O Potential Emission (ton/yr) x N2O GWP (310).

**Appendix A.2: Limited Emissions Calculations**
**Asphalt Load-Out, Silo Filling, and Yard Emissions**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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 = | -0.5 | |
| Annual Asphalt Production Limitation = | 700,000 | tons/yr |

| | Emission Factor (lb/ton asphalt) | | | Limited Potential to Emit (tons/yr) | | | |
|---|---|---|---|---|---|---|---|
| **Pollutant** | **Load-Out** | **Silo Filling** | **On-Site Yard** | **Load-Out** | **Silo Filling** | **On-Site Yard** | **Total** |
| Total PM* | 5.2E-04 | 5.9E-04 | NA | 0.18 | 0.21 | NA | **0.39** |
| Organic PM | 3.4E-04 | 2.5E-04 | NA | 0.12 | 0.089 | NA | **0.21** |
| TOC | 0.004 | 0.012 | 0.001 | 1.46 | 4.27 | 0.385 | **6.1** |
| CO | 0.001 | 0.001 | 3.5E-04 | 0.47 | 0.413 | 0.123 | **1.01** |

NA = Not Applicable (no AP-42 Emission Factor)

| | | | | |
|---|---|---|---|---|
| **PM/HAPs** | **0.008** | **0.010** | **0** | **0.019** |
| **VOC/HAPs** | **0.022** | **0.054** | **0.006** | **0.081** |
| **non-VOC/HAPs** | **1.1E-04** | **1.2E-05** | **3.0E-05** | **1.5E-04** |
| **non-VOC/non-HAPs** | **0.11** | **0.06** | **0.03** | **0.19** |

| | | | | |
|---|---|---|---|---|
| **Total VOCs** | **1.37** | **4.27** | **0.4** | **6.0** |
| **Total HAPs** | **0.03** | **0.06** | **0.006** | **0.10** |
| | | | **Worst Single HAP** | **0.031 (formaldehyde)** |

**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)::
Total PM/PM10 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
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 Calculations**
**Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Organic Particulate-Based Compounds (Table 11.1-15)**

| | | | | | Speciation Profile | | Limited Potential to Emit (tons/yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Pollutant** | **CASRN** | **Category** | **HAP Type** | **Source** | **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** |
| PAH HAPs | | | | | | | | | | |
| Acenaphthene | 83-32-9 | PM/HAP | POM | Organic PM | 0.26% | 0.47% | 3.1E-04 | 4.2E-04 | NA | 7.3E-04 |
| Acenaphthylene | 208-96-8 | PM/HAP | POM | Organic PM | 0.028% | 0.014% | 3.3E-05 | 1.2E-05 | NA | 4.6E-05 |
| Anthracene | 120-12-7 | PM/HAP | POM | Organic PM | 0.07% | 0.13% | 8.4E-05 | 1.2E-04 | NA | 2.0E-04 |
| Benzo(a)anthracene | 56-55-3 | PM/HAP | POM | Organic PM | 0.019% | 0.056% | 2.3E-05 | 5.0E-05 | NA | 7.2E-05 |
| Benzo(b)fluoranthene | 205-99-2 | PM/HAP | POM | Organic PM | 0.0076% | 0 | 9.1E-06 | 0 | NA | 9.1E-06 |
| Benzo(k)fluoranthene | 207-08-9 | PM/HAP | POM | Organic PM | 0.0022% | 0 | 2.6E-06 | 0 | NA | 2.6E-06 |
| Benzo(g,h,i)perylene | 191-24-2 | PM/HAP | POM | Organic PM | 0.0019% | 0 | 2.3E-06 | 0 | NA | 2.3E-06 |
| Benzo(a)pyrene | 50-32-8 | PM/HAP | POM | Organic PM | 0.0023% | 0 | 2.7E-06 | 0 | NA | 2.7E-06 |
| Benzo(e)pyrene | 192-97-2 | PM/HAP | POM | Organic PM | 0.0078% | 0.0095% | 9.3E-06 | 8.4E-06 | NA | 1.8E-05 |
| Chrysene | 218-01-9 | PM/HAP | POM | Organic PM | 0.103% | 0.21% | 1.2E-04 | 1.9E-04 | NA | 3.1E-04 |
| Dibenz(a,h)anthracene | 53-70-3 | PM/HAP | POM | Organic PM | 0.00037% | 0 | 4.4E-07 | 0 | NA | 4.4E-07 |
| Fluoranthene | 206-44-0 | PM/HAP | POM | Organic PM | 0.05% | 0.15% | 6.0E-05 | 1.3E-04 | NA | 1.9E-04 |
| Fluorene | 86-73-7 | PM/HAP | POM | Organic PM | 0.77% | 1.01% | 9.2E-04 | 9.0E-04 | NA | 1.8E-03 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | PM/HAP | POM | Organic PM | 0.00047% | 0 | 5.6E-07 | 0 | NA | 5.6E-07 |
| 2-Methylnaphthalene | 91-57-6 | PM/HAP | POM | Organic PM | 2.38% | 5.27% | 2.8E-03 | 4.7E-03 | NA | 0.008 |
| Naphthalene | 91-20-3 | PM/HAP | POM | Organic PM | 1.25% | 1.82% | 1.5E-03 | 1.6E-03 | NA | 3.1E-03 |
| Perylene | 198-55-0 | PM/HAP | POM | Organic PM | 0.022% | 0.03% | 2.6E-05 | 2.7E-05 | NA | 5.3E-05 |
| Phenanthrene | 85-01-8 | PM/HAP | POM | Organic PM | 0.81% | 1.80% | 9.7E-04 | 1.6E-03 | NA | 2.6E-03 |
| Pyrene | 129-00-0 | PM/HAP | POM | Organic PM | 0.15% | 0.44% | 1.8E-04 | 3.9E-04 | NA | 5.7E-04 |
| **Total PAH HAPs** | | | | | | | **0.007** | **0.010** | **NA** | **0.017** |
| Other semi-volatile HAPs | | | | | | | | | | |
| Phenol | | PM/HAP | --- | Organic PM | 1.18% | 0 | 1.4E-03 | 0 | 0 | 1.4E-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 Calculations**
**Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**
**Limited Emissions**

**Organic Volatile-Based Compounds (Table 11.1-16)**

| | | | | | Speciation Profile | | Limited Potential to Emit (tons/yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Pollutant** | **CASRN** | **Category** | **HAP Type** | **Source** | **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** |
| **VOC** | | VOC | --- | TOC | 94% | 100% | **1.37** | **4.27** | **0.36** | **6.00** |
| non-VOC/non-HAPS | | | | | | | | | | |
| Methane | 74-82-8 | non-VOC/non-HAP | --- | TOC | 6.50% | 0.26% | 9.5E-02 | 1.1E-02 | 2.5E-02 | 0.131 |
| Acetone | 67-64-1 | non-VOC/non-HAP | --- | TOC | 0.046% | 0.055% | 6.7E-04 | 2.3E-03 | 1.8E-04 | 0.003 |
| Ethylene | 74-85-1 | non-VOC/non-HAP | --- | TOC | 0.71% | 1.10% | 1.0E-02 | 4.7E-02 | 2.7E-03 | 0.060 |
| **Total non-VOC/non-HAPS** | | | | | 7.30% | 1.40% | **0.106** | **0.060** | **0.028** | **0.19** |
| Volatile organic HAPs | | | | | | | | | | |
| Benzene | 71-43-2 | VOC/HAP | --- | TOC | 0.052% | 0.032% | 7.6E-04 | 1.4E-03 | 2.0E-04 | 2.3E-03 |
| Bromomethane | 74-83-9 | VOC/HAP | --- | TOC | 0.0096% | 0.0049% | 1.4E-04 | 2.1E-04 | 3.7E-05 | 3.9E-04 |
| 2-Butanone | 78-93-3 | VOC/HAP | --- | TOC | 0.049% | 0.039% | 7.1E-04 | 1.7E-03 | 1.9E-04 | 2.6E-03 |
| Carbon Disulfide | 75-15-0 | VOC/HAP | --- | TOC | 0.013% | 0.016% | 1.9E-04 | 6.8E-04 | 5.0E-05 | 9.2E-04 |
| Chloroethane | 75-00-3 | VOC/HAP | --- | TOC | 0.00021% | 0.004% | 3.1E-06 | 1.7E-04 | 8.1E-07 | 1.7E-04 |
| Chloromethane | 74-87-3 | VOC/HAP | --- | TOC | 0.015% | 0.023% | 2.2E-04 | 9.8E-04 | 5.8E-05 | 1.3E-03 |
| Cumene | 92-82-8 | VOC/HAP | --- | TOC | 0.11% | 0 | 1.6E-03 | 0 | 4.2E-04 | 2.0E-03 |
| Ethylbenzene | 100-41-4 | VOC/HAP | --- | TOC | 0.28% | 0.038% | 4.1E-03 | 1.6E-03 | 1.1E-03 | 0.007 |
| Formaldehyde | 50-00-0 | VOC/HAP | --- | TOC | 0.088% | 0.69% | 1.3E-03 | 2.9E-02 | 3.4E-04 | 0.031 |
| n-Hexane | 100-54-3 | VOC/HAP | --- | TOC | 0.15% | 0.10% | 2.2E-03 | 4.3E-03 | 5.8E-04 | 0.007 |
| Isooctane | 540-84-1 | VOC/HAP | --- | TOC | 0.0018% | 0.00031% | 2.6E-05 | 1.3E-05 | 6.9E-06 | 4.6E-05 |
| Methylene Chloride | 75-09-2 | non-VOC/HAP | --- | TOC | 0 | 0.00027% | 0 | 1.2E-05 | 0 | 1.2E-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% | 1.1E-04 | 2.3E-04 | 2.8E-05 | 3.6E-04 |
| Tetrachloroethene | 127-18-4 | non-VOC/HAP | --- | TOC | 0.0077% | 0 | 1.1E-04 | 0 | 3.0E-05 | 1.4E-04 |
| Toluene | 100-88-3 | VOC/HAP | --- | TOC | 0.21% | 0.062% | 3.1E-03 | 2.6E-03 | 8.1E-04 | 0.007 |
| 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 | 1.9E-05 | 0 | 5.0E-06 | 2.4E-05 |
| m-/p-Xylene | 1330-20-7 | VOC/HAP | --- | TOC | 0.41% | 0.20% | 6.0E-03 | 8.5E-03 | 1.6E-03 | 0.016 |
| o-Xylene | 95-47-6 | VOC/HAP | --- | TOC | 0.08% | 0.057% | 1.2E-03 | 2.4E-03 | 3.1E-04 | 3.9E-03 |
| **Total volatile organic HAPs** | | | | | 1.50% | 1.30% | **0.022** | **0.055** | **0.006** | **0.083** |

**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
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
MTBE = Methyl tert butyl ether

**Appendix A.2: Limited Emissions Calculations**
**Material Storage Piles**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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.

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
where Ef = 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 | 2.78 | 1.527 | 0.534 |
| Limestone | 1.6 | 1.85 | 6.89 | 2.329 | 0.815 |
| RAP | 0.5 | 0.58 | 2.75 | 0.290 | 0.102 |
| Gravel | 1.6 | 1.85 | 0 | 0.000 | 0.000 |
| Slag | 3.8 | 4.40 | 1.57 | 1.260 | 0.441 |
| Shingles | 3.8 | 4.40 | 0.46 | 0.369 | 0.129 |
| | | | **Totals** | **5.78** | **2.02** |

**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)
**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

**Appendix A.2: Limited Emissions Calculations**
**Material Processing, Handling, Crushing, Screening, and Conveying**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**Batch or Continuous Drop Operations (AP-42 Section 13.2.4)**

To estimate potential fugitive dust emissions from processing and hangling 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*(0.0032)*[(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 |

| | | |
|---|---|---|
| Annual Asphalt Production Limitation = | 700,000 | tons/yr |
| Percent Asphalt Cement/Binder (weight %) = | 5.0% | |
| Maximum Material Handling Throughput = | 665,000 | 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 | 0.75 | 0.36 | 0.05 |
| Front-end loader dumping of materials into feeder bins | 0.75 | 0.36 | 0.05 |
| Conveyor dropping material into dryer/mixer or batch tower | 0.75 | 0.36 | 0.05 |
| **Total (tons/yr)** | **2.26** | **1.07** | **0.16** |

**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, recycled asphalt pavement (RAP), gravel, slag, and other additivies
*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 | 1.80 | 0.80 |
| Screening | 0.025 | 0.0087 | 8.31 | 2.89 |
| Conveying | 0.003 | 0.0011 | 1.00 | 0.37 |
| **Limited Potential to Emit (tons/yr) =** | | | **11.11** | **4.06** |

**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, 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.2: Limited Emissions Calculations**
**Unpaved Roads**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**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 = | 700,000 | tons/yr |
| Percent Asphalt Cement/Binder (weight %) = | 5.0% | |
| Maximum Material Handling Throughput = | 665,000 | tons/yr |
| Maximum Asphalt Cement/Binder Throughput = | 35,000 | tons/yr |
| No. 2 Fuel Oil Limitation = | 864,007 | 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 | 3.0E+04 | 1.2E+06 | 300 | 0.057 | 1,686.8 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 17.0 | 0 | 17.0 | 3.0E+04 | 5.0E+05 | 300 | 0.057 | 1,686.8 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 36.0 | 48.0 | 9.7E+02 | 4.7E+04 | 300 | 0.057 | 55.2 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.0 | 9.7E+02 | 1.2E+04 | 300 | 0.057 | 55.2 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 32.0 | 44.0 | 9.1E+01 | 4.0E+03 | 300 | 0.057 | 5.2 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.0 | 9.1E+01 | 1.1E+03 | 300 | 0.057 | 5.2 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 15.0 | 4.2 | 19.2 | 1.6E+05 | 3.0E+06 | 200 | 0.038 | 5,997.5 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 15.0 | 0 | 15.0 | 1.6E+05 | 2.4E+06 | 200 | 0.038 | 5,997.5 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 17.0 | 24.0 | 41.0 | 2.9E+04 | 1.2E+06 | 300 | 0.057 | 1,657.2 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 17.0 | 0 | 17.0 | 2.9E+04 | 5.0E+05 | 300 | 0.057 | 1,657.2 |
| | **Total** | | | | **4.4E+05** | **8.8E+06** | | | **1.9E+04** |

| | | |
|---|---|---|
| Average Vehicle Weight Per Trip = | 20.3 | tons/trip |
| Average Miles Per Trip = | 0.043 | 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) | 5.14 | 1.31 | 0.13 | 3.38 | 0.86 | 0.09 | 1.69 | 0.43 | 0.04 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 5.14 | 1.31 | 0.13 | 3.38 | 0.86 | 0.09 | 1.69 | 0.43 | 0.04 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 0.168 | 0.043 | 0.00 | 0.111 | 0.028 | 2.8E-03 | 0.055 | 0.014 | 1.4E-03 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 0.168 | 0.043 | 0.00 | 0.111 | 0.028 | 2.8E-03 | 0.055 | 0.014 | 1.4E-03 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 0.016 | 0.004 | 4.0E-04 | 0.010 | 0.003 | 2.6E-04 | 0.005 | 0.001 | 1.3E-04 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 0.016 | 0.004 | 4.0E-04 | 0.010 | 0.003 | 2.6E-04 | 0.005 | 0.001 | 1.3E-04 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 18.28 | 4.66 | 0.47 | 12.02 | 3.06 | 0.31 | 6.01 | 1.53 | 0.15 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 18.28 | 4.66 | 0.47 | 12.02 | 3.06 | 0.31 | 6.01 | 1.53 | 0.15 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 5.05 | 1.29 | 0.13 | 3.32 | 0.85 | 0.08 | 1.66 | 0.42 | 0.04 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 5.05 | 1.29 | 0.13 | 3.32 | 0.85 | 0.08 | 1.66 | 0.42 | 0.04 |
| | **Totals** | **57.30** | **14.60** | **1.46** | **37.68** | **9.60** | **0.96** | **18.84** | **4.80** | **0.48** |

**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)
PM2.5 = PM10
PTE = Potential to Emit

**Appendix A.2: Limited Emissions Calculations**
**Paved Roads**
**Limited Emissions**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

**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 = | 700,000 | tons/yr |
| Percent Asphalt Cement/Binder (weight %) = | 5.0% | |
| Maximum Material Handling Throughput = | 665,000 | tons/yr |
| Maximum Asphalt Cement/Binder Throughput = | 35,000 | tons/yr |
| No. 2 Fuel Oil Limitation = | 864,007 | 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 | 3.0E+04 | 1.2E+06 | 400 | 0.076 | 2,249.1 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 17.0 | 0 | 17.00 | 3.0E+04 | 5.0E+05 | 400 | 0.076 | 2,249.1 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 36.0 | 48.00 | 9.7E+02 | 4.7E+04 | 500 | 0.095 | 92.1 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.00 | 9.7E+02 | 1.2E+04 | 500 | 0.095 | 92.1 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 12.0 | 32.0 | 44.00 | 9.1E+01 | 4.0E+03 | 500 | 0.095 | 8.6 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 12.0 | 0 | 12.00 | 9.1E+01 | 1.1E+03 | 500 | 0.095 | 8.6 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 15.0 | 4.2 | 19.20 | 1.6E+05 | 3.0E+06 | 300 | 0.057 | 8,996.2 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 15.0 | 0 | 15.00 | 1.6E+05 | 2.4E+06 | 300 | 0.057 | 8,996.2 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 17.0 | 24.0 | 41.00 | 2.9E+04 | 1.2E+06 | 500 | 0.095 | 2,762.0 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 17.0 | 0 | 17.00 | 2.9E+04 | 5.0E+05 | 500 | 0.095 | 2,762.0 |
| | **Total** | | | | **4.4E+05** | **8.8E+06** | | | **2.8E+04** |

| | | |
|---|---|---|
| Average Vehicle Weight Per Trip = | 20.3 | tons/trip |
| Average Miles Per Trip = | 0.065 | miles/trip |

Unmitigated Emission Factor, Ef = [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/VMT = 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^2 = Ubitiguous 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 | |
|---|---|---|---|---|
| Unmitigated Emission Factor, Ef = | 0.149 | 0.030 | 0.007 | lb/mile |
| Mitigated Emission Factor, Eext = | 0.136 | 0.027 | 0.007 | 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) | 0.17 | 0.03 | 8.21E-03 | 0.15 | 0.03 | 7.51E-03 | 0.08 | 0.02 | 3.75E-03 |
| Aggregate/RAP Truck Leave Empty | Dump truck (16 CY) | 0.17 | 0.03 | 8.21E-03 | 0.15 | 0.03 | 7.51E-03 | 0.08 | 0.02 | 3.75E-03 |
| Asphalt Cement/Binder Truck Enter Full | Tanker truck (6000 gal) | 0.007 | 0.001 | 3.4E-04 | 0.006 | 0.001 | 3.1E-04 | 0.003 | 6.3E-04 | 1.5E-04 |
| Asphalt Cement/Binder Truck Leave Empty | Tanker truck (6000 gal) | 0.007 | 0.001 | 3.4E-04 | 0.006 | 0.001 | 3.1E-04 | 0.003 | 6.3E-04 | 1.5E-04 |
| Fuel Oil Truck Enter Full | Tanker truck (6000 gal) | 6.4E-04 | 1.3E-04 | 3.2E-05 | 5.9E-04 | 1.2E-04 | 2.9E-05 | 2.9E-04 | 5.9E-05 | 1.4E-05 |
| Fuel Oil Truck Leave Empty | Tanker truck (6000 gal) | 6.4E-04 | 1.3E-04 | 3.2E-05 | 5.9E-04 | 1.2E-04 | 2.9E-05 | 2.9E-04 | 5.9E-05 | 1.4E-05 |
| Aggregate/RAP Loader Full | Front-end loader (3 CY) | 0.67 | 0.13 | 0.03 | 0.61 | 0.12 | 0.03 | 0.31 | 0.06 | 0.02 |
| Aggregate/RAP Loader Empty | Front-end loader (3 CY) | 0.67 | 0.13 | 0.03 | 0.61 | 0.12 | 0.03 | 0.31 | 0.06 | 0.02 |
| Asphalt Concrete Truck Leave Full | Dump truck (16 CY) | 0.21 | 0.04 | 1.01E-02 | 0.19 | 0.04 | 9.22E-03 | 0.09 | 1.88E-02 | 4.61E-03 |
| Asphalt Concrete Truck Enter Empty | Dump truck (16 CY) | 0.21 | 0.04 | 1.01E-02 | 0.19 | 0.04 | 9.22E-03 | 0.09 | 1.88E-02 | 4.61E-03 |
| | **Totals** | **2.10** | **0.42** | **0.10** | **1.92** | **0.38** | **0.09** | **0.96** | **0.19** | **0.05** |

**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)
PM2.5 = PM10

**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 Calculations**
**Cold Mix Asphalt Production and Stockpiles**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

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

Cold Mix Asphalt VOC Usage Limitation = 31.11 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% | 32.75 | 31.11 | 1.053 |
| Cut back asphalt medium cure (assuming kerosene solvent) | 28.6% | 70.0% | 44.45 | 31.11 | 1.429 |
| Cut back asphalt slow cure (assuming fuel oil solvent) | 20.0% | 25.0% | 124.45 | 31.11 | 4.000 |
| Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent) | 15.0% | 46.4% | 67.05 | 31.11 | 2.155 |
| Other asphalt with solvent binder | 25.9% | 2.5% | 1,244.47 | 31.11 | 40.0 |
| **Worst Case Limited PTE of VOC =** | | | | **31.11** | |

**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 |
| **Limited PTE of Total HAPs (tons/yr) =** | **8.12** | |
| **Limited PTE of Single HAP (tons/yr) =** | **2.80** | **Xylenes** |

**Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents***

| | | Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents | | | | |
|---|---|---|---|---|---|---|
| Volatile Organic HAP | CAS# | 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% | |
| **Total Organic HAPs** | | **26.08%** | **0.33%** | **1.29%** | **0.68%** | **0.19%** |
| **Worst Single HAP** | | **9.00% Xylenes** | **0.31% Naphthalene** | **0.50% Xylenes** | **0.23% Xylenes** | **0.07% Chrysene** |

**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. Available on the Internet at: http://www.aehs.com/publications/catalog/contents/tph.htm

**Abbreviations**
VOC = Volatile Organic Compounds
PTE = Potential to Emit

**Appendix A.2: Limited Emissions Calculations**
**Gasoline Fuel Transfer and Dispensing Operation**

**Company Name:** E & B Paving Inc.
**Source Address:** 7320 Lower Huntington Road, Ft. Wayne, Indiana 46809
**Permit Number:** F003-30070-03281
**Reviewer:** Hannah L. Desrosiers
**Date Submitted:** 12/29/2010

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.

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:

| | | |
|---|---|---|
| Gasoline Throughput = | 1,300 | gallons/day |
| = | 474.5 | kgal/yr |

**Volatile Organic Compounds**

| Emission Source | Emission Factor (lb/kgal of throughput) | PTE of VOC (tons/yr)* |
|---|---|---|
| Filling storage tank (balanced submerged filling) | 0.3 | 0.07 |
| Tank breathing and emptying | 1.0 | 0.24 |
| Vehicle refueling (displaced losses - controlled) | 1.1 | 0.26 |
| Spillage | 0.7 | 0.17 |
| **Total** | | **0.74** |

**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 |
| **Limited PTE of Total HAPs (tons/yr) =** | **0.19** | |
| **Limited PTE of Single HAP (tons/yr) =** | **0.07** | **Xylenes** |

**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. Available on the Internet at: http://www.aehs.com/publications/catalog/contents/tph.htm

**Abbreviations**
VOC = Volatile Organic Compounds PTE = Potential to Emit

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*
**Governor**

*Thomas W. Easterly*
**Commissioner**

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


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

TO: Steve Henderson
E & B Paving, Inc.
286 W 300 N
Anderson, IN 46012

DATE: September 26, 2011

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

SUBJECT: Final Decision
Federally Enforceable State Operating Permit Renewal
003-30070-03281

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

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

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

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

Final Applicant Cover letter.dot 11/30/07

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**
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Toll Free (800) 451-6027
**www.idem.IN.gov**

September 26, 2011

TO: Allen County Public Library – Aboite Branch

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

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

**Applicant Name: E & B Paving, Inc.**
**Permit Number: 003-30070-03281**

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

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

Enclosures
Final Library.dot 11/30/07

# Mail Code 61-53

| IDEM Staff | GHOTOPP 9/26/2011<br>E & B Paving, Inc 30070 (draft/final) | | | AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING |
|---|---|---|---|---|
| Name and address of Sender | ▶ | Indiana Department of Environmental Management<br>Office of Air Quality – Permits Branch<br>100 N. Senate<br>Indianapolis, IN 46204 | Type of Mail:<br>**CERTIFICATE OF MAILING ONLY** | |

| 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<br>Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | Steve Henderson E & B Paving, Inc 286 W 300 N Anderson IN 46012 (Source CAATS) via confirmed delivery | | | | | | | | | |
| 2 | | Daniel & Sandy Trimmer 15021 Yellow River Road Columbia City IN 46725 *(Affected Party)* | | | | | | | | | |
| 3 | | Duane & Deborah Clark Clark Farms 6973 E. 500 S. Columbia City IN 46725 *(Affected Party)* | | | | | | | | | |
| 4 | | Mr. Victor Locke WPTA-TV P.O.Box 2121 Fort Wayne IN 46801 *(Affected Party)* | | | | | | | | | |
| 5 | | Fort Wayne City Council and Mayors Office One Main Street Fort Wayne IN 46802 *(Local Official)* | | | | | | | | | |
| 6 | | Mr. John E. Hampton Plumbers & Steamfitters, Local 166 2930 W Ludwig Rd Fort Wayne IN 46818-1328 *(Affected Party)* | | | | | | | | | |
| 7 | | Allen Co. Board of Commissioners One Main St. Fort Wayne IN 46802 *(Local Official)* | | | | | | | | | |
| 8 | | Fort Wayne-Allen County Health Department 1 E Main Street, 5th Floor Fort Wayne IN 46802-1810 *(Health Department)* | | | | | | | | | |
| 9 | | Aboite Branch Library 5630 Coventry Lane Fort Wayne IN 46804 *(Library)* | | | | | | | | | |
| 10 | | Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 *(Affected Party)* | | | | | | | | | |
| 11 | | | | | | | | | | | |
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