



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding the Renewal of a
Federally Enforceable State Operating Permit (FESOP)

For in Brooks Construction Company, Inc. in Allen County

Permit No. F003-33778-00374

The Indiana Department of Environmental Management (IDEM) has received an application from Brooks Construction Company, Inc. located at 2711 Banks Ave., Fort Wayne, Indiana 46802 for a renewal of its FESOP issued on July 13, 2009. If approved by IDEM's Office of Air Quality (OAQ), this proposed modification would allow Brooks Construction Company, Inc. to make certain changes at its existing stationary parallel flow drum mix asphalt plant. Brooks Construction Company, Inc. has applied to revise the baghouse operating and compliance monitoring requirements and to switch to only burning natural gas in the dryer/mixer burner.

This draft FESOP Renewal does not contain any new equipment that would emit air pollutants; however, some conditions from previously issued permits/approvals have been corrected, changed or removed. This notice fulfills the public notice procedures to which those conditions are subject. IDEM has reviewed this application, and has developed preliminary findings, consisting of a draft permit and several supporting documents, that would allow for these changes.

A copy of the permit application and IDEM's preliminary findings are available at:

Allen County Public Library
900 Library Plaza
Fort Wayne, IN 46802

A copy of the preliminary findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>.

How can you participate in this process?

The date that this notice is published in a newspaper marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the **air pollution impact** of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public meeting instead of, or in addition to, a public hearing. If a public hearing or meeting is held, IDEM will make a separate announcement of the date, time, and location of that hearing or meeting. At a hearing, you would have an opportunity to submit written comments and make verbal comments. At a meeting, you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit

application, please contact IDEM at the address below. Please refer to permit number F003-33778-00374 in all correspondence.

Comments should be sent to:

Brian Wright
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension (4-6544)
Or dial directly: (317) 234-6544
Fax: (317)-232-6749 attn: Brian Wright
E-mail: Bwright1@idem.in.gov

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor or noise. For such issues, please contact your local officials.

For additional information about air permits and how you can participate, please see IDEM's **Guide for Citizen Participation** and **Permit Guide** on the Internet at: www.idem.in.gov.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM's response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM's decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above, at the local library indicated above, and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions please contact Brian Wright of my staff at the above address.



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

BW



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DRAFT

Federally Enforceable State Operating Permit Renewal OFFICE OF AIR QUALITY

**Brooks Construction Company Inc.
2711 Banks Ave.
Fort Wayne, Indiana 46802**

(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.

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. F003-33778-00374	
Issued by:	Issuance Date:
Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Expiration Date:

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary parallel flow drum mix asphalt plant.

Source Address:	2711 Banks Ave., Fort Wayne, Indiana 46802
General Source Phone Number:	260-478-1990
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 Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

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

- (a) One (1) asphalt parallel flow drum mixer/dryer, identified as EU-01, capable of processing 250 tons per hour of raw material, equipped with one (1) 86 million (MM) British thermal units (Btu) per hour natural gas fired burner, processing steel slag and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix; equipped with one (1) high efficiency cyclone collector identified as CE-01 and one (1) settling chamber, identified as CE-02, in line, for particulate matter (PM) control, and one (1) 45.95 MMBtu/hr thermal oxidizer, identified as CE-03, for volatile organic compounds and condensable particulate matter control, exhausting at one (1) stack SV-1. This plant does not produce cold mix asphalt. No shingles are ground at this source.

Under NSPS Subpart I, this is considered an affected facility.

- (b) Material Handling and conveying operations, approved for construction in 2009, consisting of the following:
- (1) Two (2) cold feed systems
 - (2) Two (2) pug mills
 - (3) Four (4) Feeder Conveyors
 - (4) Four (4) Screens
 - (5) One (1) Recycled Asphalt Pavement (RAP) System

Under NSPS Subpart I, this is considered an affected facility.

- (c) One (1) liquid asphalt storage tank, identified as T-01, with a maximum storage capacity of 20,000 gallons.

- (d) One (1) number two (No. 2) fuel storage tank, identified as T-02, with a maximum storage capacity of 20,000 gallons.
- (e) One (1) rejuvenator storage tank, identified as T-03, with a maximum storage capacity of 20,000 gallons.
- (f) One (1) waste oil storage tank, identified as T-04, with a maximum storage capacity of 20,000 gallons.
- (g) One (1) hot oil heater, burning natural gas, nominally rated at 2.00 million British thermal units per hour (MMBtu/hr), and exhausting through stack SV-2.

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) A petroleum fuel, other than gasoline, dispensing facility, having a storage tank capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per day or less.
- (b) Paved and unpaved roads with limited public access.

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, F003-33778-00374, 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)]

(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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

- (A) A description of the emergency;

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

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

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
 - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
 - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
 - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

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

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

- (a) All terms and conditions of permits established prior to F003-33778-00374 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(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

- (b) A timely renewal application is one that is:
- (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:
- Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:
- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
 - (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

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

(4) The Permittee notifies the:

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

and

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

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

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b)(1) and (c). The Permittee shall make such records available, upon reasonable request, for public review.

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

- (b) Emission Trades [326 IAC 2-8-15(b)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(b).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

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

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 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

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

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

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM) 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 CO₂ equivalent emissions (CO₂e) 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 demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

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

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

- (a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.
- (b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

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

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

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

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

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

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

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

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

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

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

C.15 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

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

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

C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

-
- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the

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

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

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

- (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. Support information includes the following, where applicable:

- (AA) All calibration and maintenance records.
- (BB) All original strip chart recordings for continuous monitoring instrumentation.
- (CC) Copies of all reports required by the FESOP.

Records of required monitoring information include the following, where applicable:

- (AA) The date, place, as defined in this permit, and time of sampling or measurements.
- (BB) The dates analyses were performed.
- (CC) The company or entity that performed the analyses.
- (DD) The analytical techniques or methods used.
- (EE) The results of such analyses.
- (FF) The operating conditions as existing at the time of sampling or measurement.

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

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

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

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after

the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

- (b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

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) asphalt parallel flow drum mixer/dryer, identified as EU-01, capable of processing 250 tons per hour of raw material, equipped with one (1) 86 million (MM) British thermal units (Btu) per hour natural gas fired burner, processing steel slag and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix; equipped with one (1) high efficiency cyclone collector identified as CE-01 and one (1) settling chamber, identified as CE-02, in line, for particulate matter (PM) control, and one (1) 45.95 MMBtu/hr thermal oxidizer, identified as CE-03, for volatile organic compounds and condensable particulate matter control, exhausting at one (1) stack SV-1. This plant does not produce cold mix asphalt. No shingles are ground at this source.

Under NSPS Subpart I, this is considered an affected facility.

- (b) Material Handling and conveying operations, approved for construction in 2009, consisting of the following:
- (1) Two (2) cold feed systems
 - (2) Two (2) pug mills
 - (3) Four (4) Feeder Conveyors
 - (4) Four (4) Screens
 - (5) One (1) Recycled Asphalt Pavement (RAP) System
- (g) One (1) hot oil heater, burning natural gas, No. 2 fuel, refinery blend fuel oil, or waste oil, nominally rated at 2.00 million British thermal units per hour (MMBtu/hr), and exhausting through stack SV-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 Particulate Matter (PM) PSD Minor Limitations [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The amount of asphalt processed in the dryer/mixer shall not exceed 1,238,000 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 0.253 pounds per ton of asphalt processed.

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

D.1.2 Dryer and Mixer FESOP and PSD Minor Limits [326 IAC 2-8-4] [326 IAC 2-2]

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

- (a) The amount of asphalt processed in the dryer/mixer shall not exceed 1,238,000 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 0.115 pounds per ton of asphalt processed.
- (c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.142 pounds per ton of asphalt processed.
- (d) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.
- (e) The Permittee shall only use steel slag. The steel slag usage shall not exceed 371,400 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limitations, combined with PM10, PM2.5, and CO emissions from all other emission units at this source, shall limit the source-wide total potential to emit PM10, PM2.5, and CO to less than 100 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

D.1.3 Hazardous Air Pollutants (HAPs) [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

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 only use certified asbestos-free recycled shingles, post consumer waste and/or factory seconds, as an additive in its aggregate mix.

Compliance with this limit, combined with the limited potential to HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render the requirements 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

D.1.4 Fuel Limitations [326 IAC 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 and in order to render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (PSD) not applicable, the total amount of natural gas combusted in the dryer/mixer burner, hot oil heater, and thermal oxidizer shall not exceed 1,165 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit, combined with the PM10, PM2.5, and CO emissions from all other emission units at this source, shall limit the source-wide total potential to emit PM10, PM2.5, and CO to less than 100 tons per 12 consecutive month period, each, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (PSD) not applicable.

D.1.5 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 8-1-6 not applicable, the Permittee shall comply with the following:

- (a) The amount of asphalt processed in the dryer/mixer shall not exceed 1,238,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and
- (b) VOC emissions from the dryer/mixer shall not exceed 0.032 pound of VOC per ton of hot mix asphalt produced.

Compliance with these limits shall limit VOC emissions from the dryer/mixer to less than twenty-five (25) tons per 12 consecutive month period and shall render the requirements of 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

D.1.6 Particulate [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Matter Emission Limitations for Sources of Indirect Heating), the particulate emissions from the hot oil heater shall in no case exceed 0.6 pounds of particulate matter per million British thermal units heat input.

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

A Preventive Maintenance Plan is required for the dryer/burner and parallel flow drum mixer unit and any associated 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 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

- (a) No later than five (5) years from the most recent valid compliance demonstration, in order to demonstrate compliance with Conditions D.1.1, D.1.2(b) and D.1.2(c), the Permittee shall perform PM, PM10, and PM2.5 testing of the dryer/mixer utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of the most recent 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 PM.
- (b) If materials other than recycled asphalt pavement (RAP) are used in the production of asphalt, the Permittee shall perform PM, PM2.5, and PM10 testing on the dryer/mixer not later than 90 days after initial usage of such materials. 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 PM.

D.1.9 Particulate Control [40 CFR 60, Subpart I]

In order to comply with Conditions D.1.1, D.1.2(b), and D.1.2(c) and 40 CFR 60, Subpart I, the cyclone, settling chamber, and thermal oxidizer for the dryer/mixer shall be in operation and control PM, PM10, and PM2.5 emissions from the emission unit at all times when the dryer/mixer is in operation.

D.1.10 Asbestos Content

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

- (a) Providing shingle supplier certification that the factory second and/or post consumer waste shingles do not contain asbestos; or

- (b) Analyzing a sample of the factory second and/or post consumer waste 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.1.11 Visible Emissions Notations

- (a) Visible emission notations of the conveyors, screens, material transfer points, 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. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.1.12 Cyclone Inspections

An inspection shall be performed each calendar quarter of the cyclone controlling the dryer/mixer.

D.1.13 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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 C- Response to Excursions or Exceedances).

D.1.14 Thermal Oxidizer Temperature

- (a) A continuous monitoring system shall be calibrated and maintained on the thermal oxidizer for measuring operating temperature. The monitoring system shall be operated at all times that the dryer/mixer is in operation. For the purpose of this condition, continuous means no less often than once per fifteen (15) minutes. The output of this system shall be recorded as 3-hour average. From the date of startup until the stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1335°F.
- (b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.1.1, D.1.2(b), and D.1.2(c).

- (c) On and after the date the stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.

D.1.15 Parametric Monitoring

- (a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with limits in conditions D.1.1, D.1.2(b), and D.1.2(c).
- (b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.16 Record Keeping Requirements

- (a) To document the compliance status with Conditions D.1.1(a), D.1.2(a) and D.1.5(a) the Permittee shall keep records of the amount of asphalt processed through the dryer/mixer each month and each compliance period. Records necessary to demonstrate compliance shall be available no later than thirty (30) days of the end of each compliance period.
- (b) To document the compliance status with Condition D.1.2(e), the Permittee shall keep records of the amount of slag processed through the dryer/mixer each month and each compliance period. Records necessary to demonstrate compliance shall be available no later than thirty (30) days of the end of each compliance period.
- (c) To document the compliance status with Conditions D.1.3, D.1.4, and D.1.5, the Permittee shall maintain records in accordance with (1) through (4) below.
 - (1) Calendar dates covered in the compliance determination period;
 - (2) Natural gas usage used at the source each month and each compliance period;
 - (3) 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
 - (4) If the shingle supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (i) Shingle supplier certifications;
 - (ii) The name of the shingle supplier(s); and
 - (iii) A statement from the shingle supplier(s) that certifies the asbestos content of the shingles from their company.

The Permittee shall maintain records of all recording/monitoring data and support information. Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

- (d) To document the compliance status with Condition D.1.11, the Permittee shall maintain daily records of the visible emission notations from each of the conveyors, screens, material transfer points, and dryer/mixer stack (SV-1) exhaust. 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 plant did not operate that day).
- (e) To document the compliance status with Condition D.1.12, the Permittee shall maintain records of the results of the inspections required under Condition D.1.12.
- (f) To document the compliance status with Conditions D.1.14 and D.1.15, the Permittee shall maintain records in accordance with (1) through (2) below.
 - (1) The continuous temperature records (on a 3-hour average basis) for the thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.
 - (2) Daily records of the duct pressure or fan amperage.
- (g) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.1.15 Reporting Requirements

Quarterly summaries of the information to document the compliance status with Conditions D.1.1(a), D.1.2(a), D.1.4, and D.1.5(a) shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Insignificant Activities

(b) Paved and unpaved roads with limited public access.

(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 PM and PM10 Emissions [326 IAC 2-8-4] [326 IAC 6-5]

Pursuant to 326 IAC 2-8 and 326 IAC 6-5, the Permittee shall control PM, PM10, and PM2.5 emissions from paved and unpaved roads according to the fugitive dust plan submitted, which is included as Attachment A to this permit.

SECTION E.1

FACILITY OPERATION CONDITIONS

Emissions Unit Description: Hot-Mix Asphalt Plant

- (a) One (1) asphalt parallel flow drum mixer/dryer, identified as EU-01, capable of processing 250 tons per hour of raw material, equipped with one (1) 86 million (MM) British thermal units (Btu) per hour natural gas fired burner, processing steel slag and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix; equipped with one (1) high efficiency cyclone collector identified as CE-01 and one (1) settling chamber, identified as CE-02, in line, for particulate matter (PM) control, and one (1) 45.95 MMBtu/hr thermal oxidizer, identified as CE-03, for volatile organic compounds and condensable particulate matter control, exhausting at one (1) stack SV-1. This plant does not produce cold mix asphalt. No shingles are ground at this source.

Under NSPS Subpart I, this is considered an affected facility.

- (b) Material Handling and conveying operations, approved for construction in 2009, consisting of the following:

- (1) Two (2) cold feed systems
- (2) Two (2) pug mills
- (3) Four (4) Feeder Conveyors
- (4) Four (4) Screens
- (5) One (1) Recycled Asphalt Pavement (RAP) System

Under NSPS Subpart I, 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.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

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

Source Name: Brooks Construction Company Inc.
Source Address: 2711 Banks Ave., Fort Wayne, Indiana 46802
FESOP Permit No.: F003-33778-00374

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

Please check what document is being certified:

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

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

Signature:

Printed Name:

Title/Position:

Date:

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

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

Source Name: Brooks Construction Company Inc.
Source Address: 2711 Banks Ave., Fort Wayne, Indiana 46802
FESOP Permit No.: F003-33778-00374

This form consists of 2 pages

Page 1 of 2

- | |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none">• 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 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: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
FESOP Permit No.: F003-33778-00374
Facility: Dryer/Burner (EU-01)
Parameter: Hot Mix Asphalt Production
Limit: The amount of hot mix asphalt produced in the dryer/burner shall not exceed 1,238,000 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)

- 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: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
FESOP Permit No.: F003-33778-00374
Facility: Dryer/Mixer Burner, Hot Oil Heater, and Thermal Oxidizer
Parameter: Natural gas usage
Limit: The total amount of natural gas combusted in the dryer/mixer burner, hot oil heater, and thermal oxidizer shall not exceed 1,165 million cubic 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
	This Month	Previous 11 Months	12 Month Total

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

Source Name: Brooks Construction Company Inc.
Source Address: 2711 Banks Ave., Fort Wayne, Indiana 46802
FESOP Permit No.: F003-33778-00374

Months: _____ to _____ Year: _____

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C- General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
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: _____

Attachment A

ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN

**BROOKS CONSTRUCTION
2711 BANKS AVENUE
FORT WAYNE, IN 46802**

(a) Fugitive particulate matter (dust) emissions from paved roads, unpaved roads, and parking lots shall be controlled by one or more of the following measures:

(1) Paved roads and parking lots:

- (A) Cleaning by vacuum sweeping on an as needed basis (monthly at minimum).
- (B) Power brooming while wet either from rain or application of water.

(2) Unpaved roads and parking lots:

- (A) Paving with asphalt.
- (B) Treating with emulsified asphalt on an as needed basis.
- (C) Treating with water on an as needed basis.
- (D) Double chip and seal the road surface and maintained on an as needed basis.

(b) Fugitive particulate matter (dust) emissions from aggregate stockpiles shall be controlled by one or more of the following measures:

- (1) Maintain minimum size and number of stock piles of aggregate.
- (2) Treating around the stockpile area with emulsified asphalt on an as needed basis.
- (3) Treating around the stockpile area with water on an as needed basis.
- (4) Treating the stockpiles with water on an as needed basis.

(c) Fugitive particulate matter (dust) emissions from outdoor conveying of aggregates shall be controlled by one or more of the following measures:

- (1) Apply water at the feed and the intermediate points on an as needed basis.

(d) Fugitive particulate matter (dust) emissions from the transferring of aggregates shall be controlled by one or more of the following measures:

- (1) Minimize the vehicular distance between the transfer points.
- (2) Enclose the transfer points.
- (3) Apply water on transfer points on an as needed basis.

(e) Fugitive particulate matter (dust) emissions from transporting of aggregate by truck, front end loader, etc. shall be controlled by one or more of the following measures:

- (1) Tarping the aggregate hauling vehicles.
- (2) Maintain vehicle bodies in a condition to prevent leakage.
- (3) Spray the aggregates with water.
- (4) Maintain a 10 mile per hour (MPH) speed limit in the yard.

(f) Fugitive particulate matter (dust) emissions from the loading and unloading of aggregate shall be controlled by one or more of the following measures:

- (1) Reduce free fall distance to a minimum.
- (2) Reduce the rate of discharge of the aggregate.
- (3) Spray the aggregate with water on an as needed basis.

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

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

Attachment B

Title 40: Protection of Environment

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 aggregate 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 (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]

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a
Federally Enforceable State Operating Permit Renewal

Source Background and Description

Source Name:	Brooks Construction Company Inc.
Source Location:	2711 Banks Ave., Fort Wayne, IN 46802
County:	Allen
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
Permit Renewal No.:	F003-33778-00374
Permit Reviewer:	Brian Wright

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Brooks Construction Company Inc. relating to the operation of a stationary parallel flow drum mix asphalt plant. On October 15, 2013, Brooks Construction Company Inc. submitted an application to the OAQ requesting to renew its operating permit. Brooks Construction Company Inc. was issued its first FESOP (F003-27335-00374) on July 13, 2009.

As part of the renewal application, Brooks Construction Company Inc. has requested to revise the baghouse operating and compliance monitoring requirements and to switch to only burning natural gas in the dryer/mixer burner. Brooks Construction Company, Inc. conducted stack tests on September 17, 2010 that showed the facility, while processing only recycled asphalt pavement, could meet the PM, PM10, and opacity limitations contained in the permit after control by a cyclone, a baghouse without fabric filters (i.e., acting as a settling chamber) and a thermal oxidizer. IDEM approved the test results on August 24, 2011, and will allow Brooks Construction Company Inc. to operate the baghouse without fabric filters (i.e., acting as a settling chamber) so long as a cyclone, settling chamber, and thermal oxidizer are operated at all times when the dryer/mixer is in operation while operating the plant and processing only recycled asphalt pavement. If materials other than recycled asphalt pavement (RAP) are used in the production of asphalt, the Permittee shall perform PM, PM2.5, and PM10 testing on the dryer/mixer not later than 90 days after initial usage of such materials.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

- (a) One (1) asphalt parallel flow drum mixer/dryer, identified as EU-01, capable of processing 250 tons per hour of raw material, equipped with one (1) 86 million (MM) British thermal units (Btu) per hour natural gas fired burner, processing steel slag and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix; equipped with one (1) high efficiency cyclone collector identified as CE-01 and one (1) settling chamber, identified as CE-02, in line, for particulate matter (PM) control, and one (1) 45.95 MMBtu/hr thermal oxidizer, identified as CE-03, for volatile organic compounds and condensable particulate matter control, exhausting at one (1) stack SV-1. This plant does not produce cold mix asphalt. No shingles are ground at this source.

Under NSPS Subpart I, this is considered an affected facility.

- (b) Material Handling and conveying operations, approved for construction in 2009, consisting of the following:
 - (1) Two (2) cold feed systems

- (2) Two (2) pug mills
- (3) Four (4) Feeder Conveyors
- (4) Four (4) Screens
- (5) One (1) Recycled Asphalt Pavement (RAP) System

Under NSPS Subpart I, this is considered an affected facility.

- (c) One (1) liquid asphalt storage tank, identified as T-01, with a maximum storage capacity of 20,000 gallons.
- (d) One (1) number two (No. 2) fuel storage tank, identified as T-02, with a maximum storage capacity of 20,000 gallons.
- (e) One (1) rejuvenator storage tank, identified as T-03, with a maximum storage capacity of 20,000 gallons.
- (f) One (1) waste oil storage tank, identified as T-04, with a maximum storage capacity of 20,000 gallons.
- (g) One (1) hot oil heater, burning natural gas, nominally rated at 2.00 million British thermal units per hour (MMBtu/hr), and exhausting through stack SV-2.

Insignificant Activities (Only for FESOP Renewals and Title V Renewals)

The source also consists of the following insignificant activities:

- (a) A petroleum fuel, other than gasoline, dispensing facility, having a storage tank capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per day or less.
- (b) Paved and unpaved roads with limited public access.

Existing Approvals

Since the issuance of the FESOP No. 003-27335-00374 on July 13, 2009, the source has constructed or has been operating under the following additional approvals:

- (a) Significant Permit Revision No. 003-29551-00374 issues on December 1, 2010.

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

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Allen County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. ¹
PM _{2.5}	Unclassifiable or attainment effective April 5, 2005, for the annual PM _{2.5} standard.
PM _{2.5}	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM _{2.5} standard.
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

¹Unclassifiable 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}, SO₂, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (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 are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The source is subject to New Source Performance Standard (NSPS) Subpart I, Standards of Performance for Hot Mix Asphalt Facilities [40 CFR Part 60, Subpart I], which was in effect on August 7, 1980.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential Emissions	
Pollutant	Tons/year
PM	30,824
PM ₁₀	7,167
PM _{2.5}	1,662
SO ₂	4.31
NO _x	58.26
VOC	54.93
CO	162.80
GHGs as CO ₂ e	70,398
Total HAP	6.57
Highest Single HAP	3.49 (formaldehyde)

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM₁₀, PM_{2.5}, and CO is each equal to or greater than 100 tons per year. However, the Permittee has agreed to limit the source's PM₁₀, PM_{2.5}, 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 all other criteria pollutants are less than 100 tons per year.
- (c) 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 CO₂ equivalent emissions (CO₂e) per year.
- (d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, because the source met the following:

- (a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.
- (b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

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.

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	Total HAPs	Worst Single HAP
Dryer Fuel Combustion	0.72	2.86	2.86	0.23	37.65	2.07	31.63	45,517	0.71	1.05 (hydrogen chloride)
Dryer/Mixer (Process)	156.43	70.90	87.88	2.10	16.09	19.81	80.47	20,613	3.32	1.92 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.26	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	0.02	0.07	0.07	0.01	0.86	0.05	0.72	1,037	0.02	0.02 (hexane)
Thermal Oxidizer Combustion	0.37	1.50	1.50	0.12	19.73	1.09	16.57	23,822	0.37	0.36 (hexane)
Fugitive Emissions	93.08	27.44	10.45	0	0	10.60	1.78	0.00	0.18	0.05 (formaldehyde)
Total PTE of Entire Source	249.90	99.90	99.90	2.49	58.24	31.54	99.55	70,376	3.88	1.97 (formaldehyde)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000 CO ₂ e	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000 CO ₂ e	NA	NA

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant".
 **PM_{2.5} listed is direct PM_{2.5}.

FESOP and PSD Minor Status

This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP).

Particulate Matter (PM) PSD Minor Limitations [326 IAC 2-2]

This existing stationary source is not major for PSD because the emissions of each regulated pollutant, excluding GHGs, are less than two hundred fifty (<250) tons per year and it is not in one of the twenty-eight (28) listed source categories.

In order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The amount of asphalt processed in the dryer/mixer shall not exceed 1,238,000 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 0.253 pounds per ton of asphalt processed.

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

FESOP and PSD Minor Limits [326 IAC 2-8-4] [326 IAC 2-2]

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

- (a) The amount of asphalt processed in the dryer/mixer shall not exceed 1,238,000 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 0.115 pounds per ton of asphalt processed.
- (c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.142 pounds per ton of asphalt processed.
- (d) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.
- (e) The Permittee shall only use steel slag. The steel slag usage shall not exceed 371,400 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (f) Single Fuel Usage Limitation:
The total amount of natural gas combusted in the dryer/mixer burner, hot oil heater, and thermal oxidizer shall not exceed 1,165 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limitations, combined with PM10, PM2.5, and CO emissions from all other emission units at this source, shall limit the source-wide total potential to emit PM10, PM2.5, and CO to less than 100 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

Hazardous Air Pollutants (HAPs) Limit [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1] 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 only use certified asbestos-free recycled shingles, post consumer waste and/or factory seconds, as an additive in its aggregate mix.

Compliance with this limit, combined with the limited potential to HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render the requirements 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

Federal Rule Applicability

Compliance Assurance Monitoring (CAM)

- (a) 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.

New Source Performance Standards (NSPS)

- (a) This stationary drum hot-mix asphalt plant, approved for construction in 2008, is subject to the New Source Performance Standard for Hot Mix Asphalt Facilities, 40 CFR 60.90, Subpart I (326 IAC 12), because it meets the definition of a hot-mix asphalt facility pursuant to the rule and it was constructed after June 11, 1973. This rule limits particulate matter emissions to 0.04 grains per dry standard cubic foot (gr/dscf) and also limits visible emissions to 20% opacity.

The source will be able to comply with this rule by using a cyclone, settling chamber, and thermal oxidizer to comply with the particulate matter and visible emission limits..

The dryer/mixer is subject to the following portions of 40 CFR 60, Subpart I:

- (1) 40 CFR 60.90.
- (2) 40 CFR 60.91.
- (3) 40 CFR 60.92.
- (4) 40 CFR 60.93.

Nonapplicable portions of the NSPS will not be included in the permit.

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

- (b) The requirements of the New Source Performance Standard for Asphalt Processing and Asphalt Roofing Manufacture, 40 CFR 60, Subpart UU (326 IAC 12), are not included in the permit, since pursuant to 40 CFR 60.471, the stationary drum hot-mix asphalt plant is not an asphalt processing plant because it does not blow asphalt, or an asphalt roofing plant because it does not produce asphalt roofing products, and pursuant to 40 CFR 60.101(a) the stationary drum hot-mix asphalt plant is not a petroleum refinery because 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.
- (c) The requirements of the New Source Performance Standard for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO) (326 IAC 12), are not included in the permit, since the Recycled Asphalt Pavement (RAP) system does not contain a crusher or grinding mill. The source will be receiving pre-crushed/pre-sized RAP materials, therefore, pursuant to 40 CFR 60.670(a)(2) stand-alone screening operations at plants without crushers or grinding mills are exempt.
- (d) The requirements of the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR 60, Subpart UUU (326 IAC 12), are not included in the permit, since a stationary drum hot-mix asphalt plant is not a mineral processing plant, meaning that 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.

- (e) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR Part 60.110, Subpart Kb (326 IAC 12) are not included in the permit, since the one (1) 20,000 gallon liquid asphalt storage tank, identified as T-01, has a capacity greater than 75 m³ (19,813 gallons) but less than 151 m³ (39,890 gallons) and the liquid stored in the tank has a maximum true vapor pressures of less than 15.0 kPa. Therefore, pursuant to 40 CFR 60.110b(b), this tank is exempt from this rule and the requirements of this rule are not included in the permit for this tank.
- (f) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR Part 60.110, Subpart Kb (326 IAC 12), are not included in this permit since the one (1) 20,000 gallon #2 Fuel Oil storage tank, identified as T-02, has a capacity greater than 75 m³ (19,813 gallons) but less than 151 m³ (39,890 gallons) and the liquid stored in the tank has a maximum true vapor pressures of less than 15.0 kPa. Therefore, pursuant to 40 CFR 60.110b(b), this tank is exempt from this rule and the requirements of this rule are not included in the permit for this tank.
- (g) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR Part 60.110, Subpart Kb (326 IAC 12), are not included in this permit since the one (1) 20,000 gallon rejuvenator storage tank, identified as T-03, has a capacity greater than 75 m³ (19,813 gallons) but less than 151 m³ (39,890 gallons) and the liquid stored in the tank has a maximum true vapor pressures of less than 15.0 kPa. Therefore, pursuant to 40 CFR 60.110b(b), this tank is exempt from this rule and the requirements of this rule are not included in the permit for this tank.
- (h) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR Part 60.110, Subpart Kb (326 IAC 12), are not included in this permit since the one (1) 20,000 gallon waste oil storage tank, identified as T-04, has a capacity greater than 75 m³ (19,813 gallons) but less than 151 m³ (39,890 gallons) and the liquid stored in the tank has a maximum true vapor pressures of less than 15.0 kPa. Therefore, pursuant to 40 CFR 60.110b(b), this tank is exempt from this rule and the requirements of this rule are not included in the permit for this tank.
- (i) There are no other New Source Performance Standards (NSPS)(40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (j) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL (326 IAC 20-71), are not included in the permit, since the hot mix asphalt plant is not a major source of HAPs, is not located at and is not part of a major source of HAP emissions, and does not engage in the preparation of asphalt flux or asphalt roofing materials.
- (k) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

State Rule Applicability - Entire Source

326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3.

326 IAC 2-6 (Emission Reporting)
This source is 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 5 tons per year. Therefore, this rule does not apply.

326 IAC 5-1 (Opacity Limitations)

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

- (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.

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 one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 6.8 PM Limitations for Lake County

This source is not subject to 326 IAC 6.5 because it is not located in Lake County.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

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

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

The source is subject to the requirements of 326 IAC 6-5, because the Asphalt Load-Out and On-Site Yard, Material Screening, and Conveying, Material Processing and Handling, Material Storage Piles, and Paved Roads have potential fugitive particulate emissions greater than 25 tons per year. Pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall be controlled according to the Fugitive Dust Control Plan, which is included as Attachment A to the permit.

326 IAC 12 (New Source Performance Standards)

See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)

See Federal Rule Applicability Section of this TSD.

State Rule Applicability – Individual Facilities

Dryer/Mixer

326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)

The asphalt parallel flow drum mixer/dryer (EU-01) is not subject to 326 IAC 7-1.1, because it has potential SO₂ emissions of less than 25 tons per year.

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

In order to render the requirements of 326 IAC 8-1-6 not applicable, the Permittee shall comply with the following:

- (a) The amount of asphalt processed in the dryer/mixer shall not exceed 1,238,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

- (b) VOC emissions from the dryer/mixer shall not exceed 0.032 pound of VOC per ton of hot mix asphalt produced.

Compliance with these limits shall limit VOC emissions from the dryer/mixer to less than twenty-five (25) tons per 12 consecutive month period and shall render the requirements of 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

326 IAC 8-5-2 (Asphalt Paving Rules)

This source is not subject to the requirements of 326 IAC 8-5-2 since the source will not process emulsified or cutback asphalt.

Hot Oil Heater

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

Pursuant to 326 IAC 6-2-1(d), the hot oil heater is subject to the requirements of 326 IAC 6-2-4 since it is a source of indirect heat constructed after September 21, 1983. Particulate emissions from the hot oil heater, which has a total source operating capacity less than 10 MMBtu/hr, shall not exceed 0.6 lb/MMBtu heat input. Based on the calculations below, the hot oil heater is able to comply with this limit without the use of a control device.

$$\text{PM Emissions} = 1.9 \text{ lb PM/MMCF} * \text{MMCF}/1,000 \text{ MMBtu} = 0.0019 \text{ lbs/MMBtu}$$

Storage Tanks

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

The four (4) storage tanks (T-01 through T-04) are not subject to the requirements of 326 IAC 8-4-3 since the capacity of each tank is less than thirty-nine thousand (39,000) gallons.

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

The four (4) storage tanks (T-01 through T-04) are not subject to the requirements of 326 IAC 8-9 since they are not located in Clark, Floyd, Lake, or Porter County.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 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 2-7-5. 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 and compliance monitoring requirements applicable to this source are as follows:

- (a) The dryer/mixer has applicable compliance determination conditions as specified below:

Emission Unit	Control Device	Timeframe for Testing	Pollutant	Frequency of Testing	Limit or Requirement
EU-01	CE-01, CE-02, CE-03	No later than five (5) years from the most recent valid compliance demonstration*	PM	Once every five (5) years	0.253 lb PM/ton of asphalt
EU-01	CE-01, CE-02, CE-03	No later than five (5) years from the most recent valid compliance demonstration*	PM10 PM2.5	Once every five (5) years	0.142 lb PM2.5/ton of asphalt; 0.115 lb PM10 /ton of asphalt;

*Note: If materials other than recycled asphalt pavement (RAP) are used in the production of asphalt, the Permittee shall perform PM, PM2.5, and PM10 testing on the dryer/mixer not later than 90 days after initial usage of such materials.

Brooks Construction Company, Inc. conducted stack tests on September 17, 2010 that showed the facility, while processing only recycled asphalt pavement, could meet the PM, PM10, and opacity limitations contained in the permit after control by a cyclone, a baghouse without fabric filters (i.e., acting as a settling chamber) and a thermal oxidizer. IDEM approved the test results on August 24, 2011, and will allow Brooks Construction Company Inc. to operate the baghouse without fabric filters (i.e., acting as a settling chamber) so long as a cyclone, settling chamber, and thermal oxidizer are operated at all times when the dryer/mixer is in operation while operating the plant and processing only recycled asphalt pavement. If materials other than recycled asphalt pavement (RAP) are used in the production of asphalt, the Permittee shall perform PM, PM2.5, and PM10 testing on the dryer/mixer not later than 90 days after initial usage of such materials.

- (b) The drum mixer and aggregate dryer/burner, and the conveying, screening, and material transfer points have applicable compliance monitoring conditions as specified below:

Control	Parameter	Frequency	Range	Excursions and Exceedances
Conveyors, screening, material transfer points and dryer/mixer stack (SV-1) exhaust	Visible Emissions	Daily	Normal-Abnormal	Response Steps
Cyclone (CE-01)	Inspections	Quarterly	Normal	Response steps
Thermal Oxidizer (CE-03)	Temperature	Continuous	3-hour average temperature of 1335°F	Response steps
Thermal Oxidizer (CE-03)	Duct Pressure or Fan Amperage	Daily	Normal Range	Response steps

Recommendation

The staff recommends to the Commissioner that the FESOP Renewal be approved. This recommendation is based on the following facts and conditions:

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 October 15, 2013. A request to change the facility to only natural gas use was received on January 17, 2014.

Conclusion

The operation of this stationary parallel flow drum mix asphalt plant shall be subject to the conditions of the attached FESOP Renewal No. F003-33778-00374.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Brian Wright 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) 234-6544 or toll free at 1-800-451-6027 extension 4-6544.
- (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: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Asphalt Plant Maximum Capacity

Maximum Hourly Asphalt Production =	250	ton/hr									
Maximum Annual Asphalt Production =	2,190,000	ton/yr									
Maximum Annual Slag Usage =	657,000	ton/yr	0.66	% sulfur							
Maximum Dryer Fuel Input Rate =	86.0	MMBtu/hr									
Natural Gas Usage =	753	MMCF/yr									
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.50	% sulfur							
No. 4 Fuel Oil Usage =	0	gal/yr, and	0.50	% sulfur							
Refinery Blend (No. 2 and No. 6) Fuel Oil Usage =	0	gal/yr, and	1.00	% sulfur							
Propane Usage =	0	gal/yr, and	0.20	gr/100 ft3 sulfur							
Butane Usage =	0	gal/yr, and	0.22	gr/100 ft3 sulfur							
Used/Waste Oil Usage =	0	gal/yr, and	1.00	% sulfur	0.65	% ash	0.400	% chlorine,	0.040	% lead	
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 Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed									

Unlimited/Uncontrolled Emissions

Process Description	Unlimited/Uncontrolled Potential to Emit									
	Criteria Pollutants					GHGs		Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO ₂ e	Total HAPs	Worst Case HAP
Ducted Emissions										
Dryer Fuel Combustion	0.72	2.86	2.86	0.23	37.67	2.07	31.64	45,539	0.71	0.68 (hydrogen chloride)
Dryer/Mixer (Process)	30.660	7,118	1,643	3.72	28.47	35.04	142.35	36,411	5.87	3.39 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.46	0	0	0	0	0	0
Hot Oil Heater	0.02	0.07	0.07	0.01	0.86	0.05	0.72	1,037	0.02	0.02 (hexane)
Thermal Oxidizer Combustion	0.37	1.50	1.50	0.12	19.73	1.09	16.57	23,822	0.37	0.36 (hexane)
Worst Case Emissions*	30.660	7,119	1,644	4.31	58.26	36.17	159.65	70,398	6.25	3.39 (formaldehyde)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	1.21	1.21	1.21	0	0	18.76	3.15	0.00	0.31	0.10 (formaldehyde)
Material Storage Piles	2.34	0.82	0.82	0	0	0	0	0	0	0
Material Processing and Handling	7.07	3.35	0.51	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	34.74	12.69	12.69	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	118.61	30.23	3.02	0	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	0	0	0	0	0
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	negl
Total Fugitive Emissions	163.98	48.30	18.25	0	0.00	18.76	3.15	0.00	0.31	0.10 (formaldehyde)
Totals Unlimited/Uncontrolled PTE	30.824	7,167	1,662	4.31	58.26	54.93	162.80	70,398	6.57	3.49 (formaldehyde)

negl = negligible

*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: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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 =	250	ton/hr
Maximum Annual Asphalt Production =	2,190,000	ton/yr
Maximum Fuel Input Rate =	86	MMBtu/hr
Natural Gas Usage =	753	MMCF/yr
No. 2 Fuel Oil Usage =	0	gal/yr, and
No. 4 Fuel Oil Usage =	0	gal/yr, and
Refinery Blend (No. 2 and No. 6) Fuel Oil Usage =	0	gal/yr, and
Propane Usage =	0	gal/yr, and
Butane Usage =	0	gal/yr, and
Used/Waste Oil Usage =	0	gal/yr, and
	0.50	% sulfur
	0.50	% sulfur
	1.00	% sulfur
	0.20	gr/100 ft3 sulfur
	0.22	gr/100 ft3 sulfur
	1.00	% sulfur
	0.65	% ash
	0.400	% chlorine
	0.040	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)							Unlimited/Uncontrolled Potential to Emit (tons/yr)							
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Refinery Blend (No. 2 and 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 (No. 2 and 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	12.41	0.5	0.6	41.6	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.72
PM10/PM2.5	7.6	3.3	8.3	13.91	0.5	0.6	33.15	2.86	0.00	0.00	0.00	0.00	0.00	0.00	2.86
SO2	0.6	71.0	75.0	0.020	0.020	147.0	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	37.67	0.00	0.00	0.00	0.00	0.00	0.00	37.67
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.07	0.00	0.00	0.00	0.00	0.00	0.00	2.07
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	31.64112	0.00	0.00	0.00	0.00	0.00	0.00	31.64
Hazardous Air Pollutant															
HCl							26.4							0.00	0.00
Antimony			5.25E-03	5.25E-03			negl			0.00E+00	0.00E+00			negl	0.0E+00
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	7.5E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	7.5E-05
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	4.5E-06	0.00E+00	0.00E+00	0.00E+00			negl	4.5E-06
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	4.1E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	4.1E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	5.3E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	5.3E-04
Cobalt	8.4E-05	6.02E-03	6.02E-03	6.02E-03			2.1E-04	3.2E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	3.2E-05
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			2.2	1.9E-04	0.00E+00	0.00E+00	0.00E+00			0.0E+00	0.00
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.4E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				9.8E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	9.8E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	7.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.001
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	9.0E-06	0.00E+00	0.00E+00	0.00E+00			negl	9.0E-06
1,1,1-Trichloroethane			2.36E-04	2.36E-04					0.00E+00	0.00E+00	0.00E+00				0.0E+00
1,3-Butadiene															0.0E+00
Acetaldehyde															0.0E+00
Acrolein															0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				7.9E-04	0.00E+00	0.00E+00	0.00E+00				7.9E-04
Bis(2-ethylhexyl)phthalate							2.2E-03							0.00E+00	0.0E+00
Dichlorobenzene	1.2E-03						8.0E-07	4.5E-04						0.00E+00	4.5E-04
Ethylbenzene			6.36E-05	6.36E-05					0.00E+00	0.00E+00	0.00E+00				0.0E+00
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				2.8E-02	0.00E+00	0.00E+00	0.00E+00				0.028
Hexane	1.8E+00							0.69							0.678
Phenol							2.4E-03							0.00E+00	0.0E+00
Toluene	3.4E-03		6.20E-03	6.20E-03				1.3E-03	0.00E+00	0.00E+00	0.00E+00				1.3E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.0E+00
Polycyclic Organic Matter		3.30E-03							0.00E+00						0.0E+00
Xylene			1.09E-04	1.09E-04					0.00E+00	0.00E+00	0.00E+00				0.0E+00
Total HAPs								0.71	0.00	0.00	0.00	0	0	0.00	0.71

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, 1.3-4, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride
 PAH = Polyaromatic Hydrocarbon

* Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.
 ** Emission Factors for Refinery Blend not available in AP-42 Chapter 11.1. Therefore, assumes Refinery Blend Fuel Oil emission factors equal to No. 6 Fuel Oil emission factors.

**Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO₂e) Emissions from the
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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 =	250	ton/hr							
Maximum Annual Asphalt Production =	2,190,000	ton/yr							
Maximum Fuel Input Rate =	86	MMBtu/hr							
Natural Gas Usage =	753	MMCF/yr							
No. 2 Fuel Oil Usage =	0	gal/yr, and		0.50	% sulfur				
No. 4 Fuel Oil Usage =	0	gal/yr, and		0.50	% sulfur				
Refinery Blend, and Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and		1.00	% sulfur				
Propane Usage =	0	gal/yr, and		0.20	gr/100 ft3 sulfur				
Butane Usage =	0	gal/yr, and		0.22	gr/100 ft3 sulfur				
Used/Waste Oil Usage =	0	gal/yr, and		1.00	% sulfur		0.65%	0.40%	0.04%

Unlimited/Uncontrolled Emissions

CO ₂ e Fraction	Emission Factor (units)							Greenhouse Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential
CO ₂	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
CH ₄	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH ₄	21
N ₂ O	2.2	0.26	0.19	0.53	0.9	0.9	0.18	Nitrous oxide	N ₂ O	310

CO ₂ e Fraction	Unlimited/Uncontrolled Potential to Emit (tons/yr)						
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)
CO ₂	45,263	0	0	0	0	0	0
CH ₄	0.94	0.00	0.00	0	0	0	0
N ₂ O	0.83	0.00	0.00	0	0	0	0
Total	45,264	0	0	0	0	0	0

CO₂e for Worst Case Fuel* (tons/yr)
45,539

CO ₂ e Equivalent Emissions (tons/yr) 2013	45533	0	0	0	0	0	0
CO ₂ e Equivalent Emissions (tons/yr) 2009	45539	0	0	0	0	0	0

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

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 Process Emissions**

**Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright**

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production = 250 ton/hr
Maximum Annual Asphalt Production = 2,190,000 ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	30660	30660	30660	30660
PM10*	6.5	6.5	6.5	7117.5	7117.5	7117.5	7117.5
PM2.5*	1.5	1.5	1.5	1642.5	1642.5	1642.5	1642.5
SO2**	0.0034	0.011	0.058	3.7	12.0	63.5	3.723
NOx**	0.026	0.055	0.055	28.5	60.2	60.2	28.47
VOC**	0.032	0.032	0.032	35.0	35.0	35.0	35.04
CO***	0.13	0.13	0.13	142.4	142.4	142.4	142.35
Hazardous Air Pollutant							
HCl			2.10E-04			2.30E-01	0
Antimony	1.80E-07	1.80E-07	1.80E-07	1.97E-04	1.97E-04	1.97E-04	0.0001971
Arsenic	5.60E-07	5.60E-07	5.60E-07	6.13E-04	6.13E-04	6.13E-04	0.0006132
Beryllium	negl	negl	negl	negl	negl	negl	negl
Cadmium	4.10E-07	4.10E-07	4.10E-07	4.49E-04	4.49E-04	4.49E-04	0.0004495
Chromium	5.50E-06	5.50E-06	5.50E-06	6.02E-03	6.02E-03	6.02E-03	0.0060225
Cobalt	2.60E-08	2.60E-08	2.60E-08	2.85E-05	2.85E-05	2.85E-05	0.00002847
Lead	6.20E-07	1.50E-05	1.50E-05	6.79E-04	1.64E-02	1.64E-02	0.0006789
Manganese	7.70E-06	7.70E-06	7.70E-06	8.43E-03	8.43E-03	8.43E-03	0.0084315
Mercury	2.40E-07	2.60E-06	2.60E-06	2.63E-04	2.85E-03	2.85E-03	0.0002628
Nickel	6.30E-05	6.30E-05	6.30E-05	0.07	0.07	0.07	0.068985
Selenium	3.50E-07	3.50E-07	3.50E-07	3.83E-04	3.83E-04	3.83E-04	0.00038325
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.04	0.04	0.04	0.0438
Acetaldehyde			1.30E-03			1.42	0
Acrolein			2.60E-05			2.85E-02	0
Benzene	3.90E-04	3.90E-04	3.90E-04	0.43	0.43	0.43	0.42705
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.26	0.26	0.26	0.2628
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	3.39	3.39	3.39	3.3945
Hexane	9.20E-04	9.20E-04	9.20E-04	1.01	1.01	1.01	1.0074
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.05	0.05	0.05	0.05256
MEK			2.00E-05			0.02	0
Propionaldehyde			1.30E-04			0.14	0
Quinone			1.60E-04			0.18	0
Toluene	1.50E-04	2.90E-03	2.90E-03	0.16	3.18	3.18	0.16425
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.21	0.96	0.96	0.20805
Xylene	2.00E-04	2.00E-04	2.00E-04	0.22	0.22	0.22	0.219
Total HAPs							5.87
Worst Single HAP							3.39 (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, 11.1-4, 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.1: Unlimited Emissions Calculations
Greenhouse Gas (CO2e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

Company Name: Dave O'Mara Contractor, Inc., Plant #7
Source Address: Portable
Permit No.: F027-25301-05227
Revision No.: 027-33388-05227
Reviewer: Brian Wright
Date: 7/23/2013

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production = ton/hr
 Maximum Annual Asphalt Production = ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Greenhouse Gas Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			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	36,135	36,135	36,135	36,464
CH4	0.0120	0.0120	0.0120	21	13.1	13.1	13.1	
N2O				310	0	0	0	
Total					36,148	36,148	36,148	
CO2e Equivalent Emissions (tons/yr) 2009					36,411	36,411	36,411	
CO2e Equivalent Emissions (tons/yr) 2013					36,464	36,464	36,464	

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 N2O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2C 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: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

The following calculations determine the unlimited emissions from the processing of slag in the aggregate drying/mixing

Maximum Annual Slag Usage* = ton/yr % sulfur

	Emission Factor (lb/ton)**	Unlimited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.0014	0.46

Methodology

* The maximum annual slag usage was provided by the source.

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
Natural Gas Combustion Only
Hot Oil Heater**

Company Name: Brooks Construction, Inc.
Source Location: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
2.0	1020	17.2

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.02	0.07	0.07	0.01	0.86	0.05	0.72

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

Emission Factor in lb/MMcf	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.8E-05	1.0E-05	6.4E-04	0.02	2.9E-05	0.02

Emission Factor in lb/MMcf	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	4.3E-06	9.4E-06	1.2E-05	3.3E-06	1.8E-05	4.7E-05
					Total HAPs	0.02
					Worst HAP	0.02

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	1,031	0.0	0.0
Summed Potential Emissions in tons/yr	1,031		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	1,037		
CO2e Total in tons/yr based on 10/30/2009 federal GWPs	1,037		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).
CO2e (tons/yr) based on 10/30/2009 federal GWPs = 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.1: Unlimited Emission Calculations
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Brooks Construction, Inc.
Source Location: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr
 Natural Gas Usage = 18 MMCF/yr
 No. 2 Fuel Oil Usage = 125,143 gal/yr, and 0.50 % sulfur
 Refinery Blend (No. 2 and No. 6) Fuel Oil Usage = 125,143 gal/yr, and 1.00 % sulfur
 Waste Oil Usage = 125,143 gal/yr, and 1.00 % sulfur
 0.65 % ash 0.40 % chlorine 0.04 % lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units) Hot Oil Heater				Unlimited/Uncontrolled Potential to Emit (tons/yr) Hot Oil Heater				Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Refinery Blend Fuel Oil** (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	Refinery Blend Fuel Oil** (tons/yr)	Used/ Waste Oil (tons/yr)	
PM	1.9	2.0	12.41	41.6	0.02	0.13	0.78	2.60	2.60
PM10/PM2.5	7.6	3.3	13.91	33.15	0.07	0.21	0.87	2.07	2.07
SO2	0.6	71.0	0.0	147.0	0.01	4.44	0.00	9.20	9.20
NOx	100	20.0	55.0	19.0	0.88	1.25	3.44	1.19	3.44
VOC	5.5	0.20	0.28	1.0	0.05	0.01	0.02	0.06	0.06
CO	84	5.0	5.0	5.0	0.74	0.31	0.31	0.31	0.74
Hazardous Air Pollutant									
HCl				26.4				1.65	1.65
Antimony			5.25E-03	negl.			3.29E-04	negl.	3.29E-04
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.1E-01	1.75E-06	3.50E-05	8.26E-05	6.88E-03	6.88E-03
Beryllium	1.2E-05	4.2E-04	2.78E-05	negl.	1.05E-07	2.63E-05	1.74E-06	negl.	2.63E-05
Cadmium	1.1E-03	4.2E-04	3.98E-04	9.3E-03	9.64E-06	2.63E-05	2.49E-05	5.82E-04	5.82E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	2.0E-02	1.23E-05	2.63E-05	5.29E-05	1.25E-03	1.25E-03
Cobalt	8.4E-05		6.02E-03	2.1E-04	7.36E-07		3.77E-04	1.31E-05	3.77E-04
Lead	5.0E-04	1.3E-03	1.51E-03	2.2	4.38E-06	7.88E-05	9.45E-05	1.38E-01	0.14
Manganese	3.8E-04	8.4E-04	3.00E-03	6.8E-02	3.33E-06	5.26E-05	1.88E-04	4.25E-03	4.25E-03
Mercury	2.6E-04	4.2E-04	1.13E-04		2.28E-06	2.63E-05	7.07E-06		2.63E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	1.1E-02	1.84E-05	2.63E-05	5.29E-03	6.88E-04	5.29E-03
Selenium	2.4E-05	2.1E-03	6.83E-04	negl.	2.10E-07	1.31E-04	4.27E-05	negl.	1.31E-04
1,1,1-Trichloroethane			2.36E-04				1.48E-05		1.48E-05
Benzene	2.1E-03		2.14E-04		1.84E-05		1.34E-05		1.84E-05
Bis(2-ethylhexyl)phthalate				2.2E-03				1.38E-04	1.38E-04
Dichlorobenzene	1.2E-03			8.0E-07	1.05E-05			5.01E-08	1.05E-05
Ethylbenzene			6.36E-05				3.98E-06		3.98E-06
Formaldehyde	7.5E-02	6.10E-02	3.30E-02		6.57E-04	3.82E-03	2.06E-03		3.82E-03
Hexane	1.8E+00				1.58E-02				0.02
Phenol				2.4E-03				1.50E-04	1.50E-04
Toluene	3.4E-03		6.20E-03		2.98E-05		3.88E-04		3.88E-04
Total PAH Haps	negl		1.13E-03	3.9E-02	negl		7.07E-05	2.45E-03	2.45E-03
Polycyclic Organic Matter		3.30E-03				2.06E-04			2.06E-04
Xylene			1.09E-04				6.82E-06		6.82E-06
Total HAPs =					1.65E-02	4.45E-03	9.05E-03	1.81	1.83

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 and Refinery Blend: 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
 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

** Emission Factors for Refinery Blend not available in AP-42 Chapter 11.1. Therefore, assumes Refinery Blend Fuel Oil emission factors equal to No. 6 Fuel Oil emission factors.

Abbreviations

PM = Particulate Matter CO = Carbon Monoxide
 PM10 = Particulate Matter (<10 um) HAP = Hazardous Air Pollutant
 SO2 = Sulfur Dioxide HCl = Hydrogen Chloride
 NOx = Nitrous Oxides PAH = Polycyclic Aromatic Hydrocarbon
 VOC = Volatile Organic Compounds

**Appendix A.1: Unlimited Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Brooks Construction, Inc.
Source Location: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
46.0	1020	394.6

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.37	1.50	1.50	0.12	19.73	1.09	16.57

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

Emission Factor in lb/MMcf	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	4.1E-04	2.4E-04	1.5E-02	0.36	6.7E-04	0.37

Emission Factor in lb/MMcf	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	9.9E-05	2.2E-04	2.8E-04	7.5E-05	4.1E-04	1.1E-03
					Total HAPs	0.37
					Worst HAP	0.36

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	23,678	0.5	0.4
Summed Potential Emissions in tons/yr	23,679		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	23,818		
CO2e Total in tons/yr based on 10/30/2009 federal GWPs	23,822		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).
CO2e (tons/yr) based on 10/30/2009 federal GWPs = 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.1: Unlimited Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions**

**Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright**

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 =	2,190,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.57	0.64	NA	1.21
Organic PM	3.4E-04	2.5E-04	NA	0.37	0.278	NA	0.65
TOC	0.004	0.012	0.001	4.55	13.34	1.205	19.1
CO	0.001	0.001	3.5E-04	1.48	1.292	0.385	3.15

NA = Not Applicable (no AP-42 Emission Factor)

PM/HAPs	0.027	0.031	0	0.058
VOC/HAPs	0.067	0.170	0.018	0.255
non-VOC/HAPs	3.5E-04	3.6E-05	9.3E-05	4.8E-04
non-VOC/non-HAPs	0.33	0.19	0.09	0.61

Total VOCs	4.28	13.34	1.1	18.8
Total HAPs	0.09	0.20	0.018	0.31
			Worst Single HAP	0.097
				(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: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	9.7E-04	1.3E-03	NA	2.3E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.0E-04	3.9E-05	NA	1.4E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	2.6E-04	3.6E-04	NA	6.2E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	7.1E-05	1.6E-04	NA	2.3E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	2.8E-05	0	NA	2.8E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	8.2E-06	0	NA	8.2E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	7.1E-06	0	NA	7.1E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	8.6E-06	0	NA	8.6E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	2.9E-05	2.6E-05	NA	5.6E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	3.8E-04	5.8E-04	NA	9.7E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	1.4E-06	0	NA	1.4E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.9E-04		NA	1.9E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	2.9E-03	2.8E-03	NA	5.7E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	1.8E-06	0	NA	1.8E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	8.9E-03	1.5E-02	NA	0.024
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	4.7E-03	5.1E-03	NA	9.7E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	8.2E-05	8.3E-05	NA	1.7E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	3.0E-03	5.0E-03	NA	8.0E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	5.6E-04	1.2E-03	NA	1.8E-03
Total PAH HAPs							0.022	0.031	NA	0.053
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	4.4E-03	0	0	4.4E-03

NA = Not Applicable (no AP-42 Emission Factor)

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]
 Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

PM = Particulate Matter
 HAP = Hazardous Air Pollutant
 POM = Polycyclic Organic Matter

**Appendix A.1: Unlimited Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	4.28	13.34	1.13	18.76
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	3.0E-01	3.5E-02	7.8E-02	0.409
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	2.1E-03	7.3E-03	5.5E-04	0.010
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	3.2E-02	1.5E-01	8.6E-03	0.188
Total non-VOC/non-HAPS					7.30%	1.40%	0.332	0.187	0.088	0.61
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	2.4E-03	4.3E-03	6.3E-04	7.3E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	4.4E-04	6.5E-04	1.2E-04	1.2E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	2.2E-03	5.2E-03	5.9E-04	8.0E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	5.9E-04	2.1E-03	1.6E-04	2.9E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	9.6E-06	5.3E-04	2.5E-06	5.5E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	6.8E-04	3.1E-03	1.8E-04	3.9E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	5.0E-03	0	1.3E-03	6.3E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	1.3E-02	5.1E-03	3.4E-03	0.021
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	4.0E-03	9.2E-02	1.1E-03	0.097
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	6.8E-03	1.3E-02	1.8E-03	0.022
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	8.2E-05	4.1E-05	2.2E-05	1.5E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	3.6E-05	0	3.6E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	3.3E-04	7.2E-04	8.8E-05	1.1E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	3.5E-04	0	9.3E-05	4.4E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	9.6E-03	8.3E-03	2.5E-03	0.020
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	5.9E-05	0	1.6E-05	7.5E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.9E-02	2.7E-02	4.9E-03	0.050
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	3.6E-03	7.6E-03	9.6E-04	1.2E-02
Total volatile organic HAPs					1.50%	1.30%	0.068	0.173	0.018	0.260

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]
Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

TOC = Total Organic Compounds
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
MTBE = Methyl tert butyl ether

**Appendix A.1: Unlimited Emissions Calculations
Material Storage Piles**

Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p) / 235 \cdot (f/15)$$

where E_f = emission factor (lb/acre/day)
 s = silt content (wt %)
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.80	0.439	0.154
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.40	0.148	0.052
Gravel	1.6	1.85	1.20	0.406	0.142
Slag	3.8	4.40	1.00	0.803	0.281
Shingles	0.5	0.58	1.00	0.106	0.037
Totals				2.34	0.82

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.

RAP - recycled asphalt pavement

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.1: Unlimited Emissions Calculations
Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032) \cdot [(U/5)^{1.3} / (M/2)^{1.4}]$$

where: E_f = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
E_f (PM) =	2.27E-03	lb PM/ton of material handled
E_f (PM10) =	1.07E-03	lb PM10/ton of material handled
E_f (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Maximum Annual Asphalt Production =	2,190,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,080,500	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	2.36	1.12	0.17
Front-end loader dumping of materials into feeder bins	2.36	1.12	0.17
Conveyor dropping material into dryer/mixer or batch tower	2.36	1.12	0.17
Total (tons/yr)	7.07	3.35	0.51

Methodology

The percent asphalt cement/binder provided by the source.
 Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
 Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives
 *Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

Material Screening and Conveying (AP-42 Section 11.19.2)

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	5.62	2.50
Screening	0.025	0.0087	26.01	9.05
Conveying	0.003	0.0011	3.12	1.14
Unlimited Potential to Emit (tons/yr) =			34.74	12.69

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: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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	2,190,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	2,080,500	tons/yr
Maximum Asphalt Cement/Binder Throughput	109,500	tons/yr
Maximum No. 2 Fuel Oil Usage	0	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	9.3E+04	3.7E+06	350	0.066	6156.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	9.3E+04	1.6E+06	350	0.066	6156.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	3.0E+03	1.5E+05	150	0.028	86.4
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	3.0E+03	3.7E+04	150	0.028	86.4
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	0.0E+00	0.0E+00	150	0.028	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	0.0E+00	0.0E+00	150	0.028	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	5.0E+05	9.5E+06	500	0.095	46908.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	5.0E+05	7.4E+06	500	0.095	46908.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	9.1E+04	3.7E+06	350	0.066	6048.8
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	9.1E+04	1.6E+06	350	0.066	6048.8
Total					1.4E+06	2.8E+07			1.2E+05

Average Vehicle Weight Per Trip	20.3	tons/trip
Average Miles Per Trip	0.087	miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$	
where P =	125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, $E_{ext} =$	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	18.76	4.78	0.48	12.34	3.14	0.31	6.17	1.57	0.16
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	18.76	4.78	0.48	12.34	3.14	0.31	6.17	1.57	0.16
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.263	0.067	0.01	0.173	0.044	0.00	0.087	0.022	0.00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.263	0.067	0.01	0.173	0.044	0.00	0.087	0.022	0.00
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	142.93	36.43	3.64	93.98	23.95	2.40	46.99	11.98	1.20
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	142.93	36.43	3.64	93.98	23.95	2.40	46.99	11.98	1.20
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	18.43	4.70	0.47	12.12	3.09	0.31	6.06	1.54	0.15
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	18.43	4.70	0.47	12.12	3.09	0.31	6.06	1.54	0.15
Totals		360.78	91.95	9.19	237.22	60.46	6.05	118.61	30.23	3.02

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.1: Unlimited Emissions Calculations
Paved Roads**

Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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	= 2,190,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	= 5.0%	
Maximum Material Handling Throughput	= 2,080,500	tons/yr
Maximum Asphalt Cement/Binder Throughput	= 109,500	tons/yr
Maximum No. 2 Fuel Oil Usage	= 0	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	9.3E+04	3.7E+06	350	0.066	6156.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	9.3E+04	1.6E+06	350	0.066	6156.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	3.0E+03	1.5E+05	150	0.028	86.4
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	3.0E+03	3.7E+04	150	0.028	86.4
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	0.0E+00	0.0E+00	150	0.028	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	0.0E+00	0.0E+00	150	0.028	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	5.0E+05	9.5E+06	500	0.095	46908.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	5.0E+05	7.4E+06	500	0.095	46908.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	9.1E+04	3.7E+06	350	0.066	6048.8
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	9.1E+04	1.6E+06	350	0.066	6048.8
Total					1.4E+06	2.8E+07			1.2E+05

Average Vehicle Weight Per Trip	= 20.3	tons/trip
Average Miles Per Trip	= 0.087	miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5
where k =	0.082	0.016	0.0024
W =	20.3	20.3	20.3
C =	0.00047	0.00047	0.00036
sL =	0.6	0.6	0.6

lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)

tons = average vehicle weight (provided by source)

lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)

g/m² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$

where p =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N =	365	days per year

	PM	PM10	PM2.5	lb/mile
Unmitigated Emission Factor, E_f	0.66	0.13	0.02	lb/mile
Mitigated Emission Factor, E_{ext}	0.60	0.12	0.02	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)	2.02	0.39	0.06	1.85	0.36	0.05	0.93	0.18	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	2.02	0.39	0.06	1.85	0.36	0.05	0.93	0.18	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.028	0.006	8.2E-04	0.026	0.005	7.5E-04	0.013	2.5E-03	3.7E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.028	0.006	8.2E-04	0.026	0.005	7.5E-04	0.013	2.5E-03	3.7E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.42	3.00	0.44	14.10	2.74	0.41	7.05	1.37	0.20
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.42	3.00	0.44	14.10	2.74	0.41	7.05	1.37	0.20
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.99	0.39	0.06	1.82	0.35	0.05	0.91	0.18	0.03
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.99	0.39	0.06	1.82	0.35	0.05	0.91	0.18	0.03
Totals		38.92	7.57	1.12	35.59	6.92	1.02	17.80	3.46	0.51

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.1: Unlimited Emissions Calculations
Cold Mix Asphalt Production and Stockpiles**

Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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 =	2,190,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	0.0%	
Maximum Asphalt Cement/Binder Throughput =	0	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%	0.0	0.0
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	0.0	0.0
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	0.0	0.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	0.0	0.0
Other asphalt with solvent binder	25.9%	2.5%	0.0	0.0
Worst Case PTE of VOC =				0.0

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) =	0.00
PTE of Single HAP (tons/yr) =	0.00 Xylenes

Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents*

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
Total Organic HAPs		26.08%	0.33%	1.29%	0.68%	0.19%
Worst Single HAP		9.00%	0.31%	0.50%	0.23%	0.07%
		Xylenes	Naphthalene	Xylenes	Xylenes	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/tp.htm>

Abbreviations

VOC = Volatile Organic Compounds
 PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Gasoline Fuel Transfer and Dispensing Operation**

**Company Name: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright**

To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used. The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= \boxed{0} \text{ gallons/day} \\ &= \boxed{0.0} \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
Total		0.00

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) =	0.00
Limited PTE of Single HAP (tons/yr) =	0.00 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/tp.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Calculations
Entire Source**

Company Name: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Asphalt Plant Limitations

Maximum Hourly Asphalt Production =	250	ton/hr
Annual Asphalt Production Limitation =	1,238,000	ton/yr
Slag Usage Limitation =	371,400	ton/yr
Natural Gas Limitation ¹ =	1,165	MMCF/yr
No. 2 Fuel Oil Limitation ¹ =	0	gal/yr, and
No. 4 Fuel Oil Limitation =	0	gal/yr, and
Refinery Blend (No. 2 and No. 6) Fuel Oil Limitation ¹ =	0	gal/yr, and
Propane Limitation =	0	gal/yr, and
Butane Limitation =	0	gal/yr, and
Used/Waste Oil Limitation ¹ =	0	gal/yr, and
	0.66	% sulfur
	0.50	% sulfur
	0.50	% sulfur
	1.00	% sulfur
	0.20	gr/100 ft3 sulfur
	0.22	gr/100 ft3 sulfur
	1.00	% sulfur
	0.65	% ash
	0.400	% chlorine,
	0.040	% lead
PM Dryer/Mixer Limitation =	0.253	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.115	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.142	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.13	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production
Slag SO2 Dryer/Mixer Limitation =	0.0014	lb/ton of slag processed
Cold Mix Asphalt VOC Usage Limitation =	0.0	tons/yr
HCl Limitation =	26.4	lb/kgal

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)									
	Criteria Pollutants							Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	Nox	VOC	CO	CO2e	Total HAPs	Worst Case HAP
Ducted Emissions										
Dryer Fuel Combustion	0.72	2.86	2.86	0.23	37.65	2.07	31.63	45,517	0.71	0.68 (hydrogen chloride)
Dryer/Mixer (Process)	156.43	70.90	87.88	2.10	16.09	19.81	80.47	20,613	3.32	1.92 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.26	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion	0.02	0.07	0.07	0.01	0.86	0.05	0.72	1,037	0.02	0.02 (hexane)
Thermal Oxidizer Combustion	0.37	1.50	1.50	0.12	19.73	1.09	16.57	23,822	0.37	0.36 (hexane)
Worst Case Emissions³	156.82	72.46	89.45	2.49	58.24	20.94	97.77	70,376	3.70	1.92 (formaldehyde)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	0.69	0.69	0.69	0	0	10.60	1.78	0.00	0.18	0.05 (formaldehyde)
Material Storage Piles	1.71	0.60	0.60	0	0	0	0	0	0	0
Material Processing and Handling	4.00	1.89	0.29	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	19.64	7.17	7.17	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	67.05	17.09	1.71	0	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	0	0	0	0	0
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	negl
Total Fugitive Emissions	93.08	27.44	10.45	0	0	10.60	1.78	0.00	0.18	0.05 (formaldehyde)
Totals Limited/Controlled Emissions	249.90	99.90	99.90	2.49	58.24	31.54	99.55	70,376	3.88	1.97 (formaldehyde)

negl = negligible

Fuel component percentages provided by the source.

¹The natural gas limitation includes the dryer/mixer burner, hot oil heater, and thermal oxidizer.

³Worst Case PM, PM10, PM2.5, VOC, and CO Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion or Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Thermal Oxidizer

Appendix A.2: Limited Emissions Calculations
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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 =	250	ton/hr
Annual Asphalt Production Limitation =	1,238,000	ton/yr
Natural Gas Limitation =	753	MMCF/yr
No. 2 Fuel Oil Limitation =	0	gal/yr, and
No. 4 Fuel Oil Limitation =	0	gal/yr, and
Refinery Blend (No. 2 and No. 6) Fuel Oil Limitation =	0	gal/yr, and
Propane Limitation =	0	gal/yr, and
Butane Limitation =	0	gal/yr, and
Used/Waste Oil Limitation =	0	gal/yr, and
	0.50	% sulfur
	0.50	% sulfur
	1.00	% sulfur
	0.20	gr/100 #3 sulfur
	0.22	gr/100 #3 sulfur
	1.00	% sulfur
	0.65	% ash
	0.40	% chlorine,
	0.040	% lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)							Limited Potential to Emit (tons/yr)							Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Refinery Blend 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 Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)	
PM	1.9	2.0	7.0	12.41	0.5	0.6	41.6	0.72	0.00	0.00	0.00	0.000	0.000	0.00	0.72
PM10	7.6	3.3	8.3	13.91	0.5	0.6	33.15	2.86	0.00	0.00	0.00	0.000	0.000	0.00	2.86
SO2	0.6	71.0	75.0	157.0	0.02	0.02	147.0	0.23	0.00	0.00	0.00	0.000	0.000	0.00	0.23
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	37.65	0.00	0.00	0.00	0.00	0.00	0.00	37.65
VOC	5.5	0.20	0.20	0.28	1.0	1.10	1.0	2.07	0.00	0.00	0.00	0.00	0.00	0.00	2.07
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	31.63	0.00	0.00	0.00	0.00	0.00	0.00	31.63
Hazardous Air Pollutant															
HCl							26.4							0.00	0.00
Antimony			5.25E-03	5.25E-03			negl			0.00E+00	0.00E+00			negl	0.0E+00
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	7.5E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	7.5E-05
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	4.5E-06	0.00E+00	0.00E+00	0.00E+00			negl	4.5E-06
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	4.1E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	4.1E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	5.3E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	5.3E-04
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.2E-05		0.00E+00	0.00E+00			0.00E+00	3.2E-05
Lead	6.0E-04	1.3E-03	1.51E-03	1.51E-03			2.2	1.9E-04	0.00E+00	0.00E+00	0.00E+00			0.0E+00	0.00
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.4E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				9.8E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	9.8E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	7.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.001
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	9.0E-06	0.00E+00	0.00E+00	0.00E+00			negl	9.0E-06
1,1,1-Trichloroethane			2.36E-04	2.36E-04						0.00E+00	0.00E+00				0.0E+00
1,3-Butadiene															0.0E+00
Acetaldehyde															0.0E+00
Acrolein															0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				7.9E-04	0.00E+00	0.00E+00					7.9E-04
Bis(2-ethylhexyl)phthalate							2.2E-03							0.00E+00	0.0E+00
Dichlorobenzene	1.2E-03						8.0E-07	4.5E-04						0.00E+00	4.5E-04
Ethylbenzene			6.36E-05	6.36E-05					0.00E+00	0.00E+00					0.0E+00
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				2.8E-02	0.00E+00	0.00E+00	0.00E+00				0.028
Hexane	1.8E+00							0.68							0.678
Phenol							2.4E-03							0.00E+00	0.0E+00
Toluene	3.4E-03		6.20E-03	6.20E-03				1.3E-03	0.00E+00	0.00E+00				0.00E+00	1.3E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.0E+00
Polycyclic Organic Matter		3.30E-03							0.00E+00	0.00E+00	0.00E+00				0.0E+00
Xylene			1.09E-04	1.09E-04						0.00E+00	0.00E+00				0.0E+00
Total HAPs								0.71	0.00	0.00	0.00	0	0	0.00	0.71

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.

** Emission Factors for Refinery Blend not available in AP-42 Chapter 11.1. Therefore, assumes Refinery Blend Fuel Oil emission factors equal to No. 6 Fuel Oil emission factors.

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: Brooks Construction
Source Address: 2711 Banks Avenue, Fort Wayne, Indiana 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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 =	250	ton/hr
Maximum Annual Asphalt Production =	1,238,000	ton/yr
Maximum Fuel Input Rate =	86	MMBtu/hr
Natural Gas Usage =	753	MMCF/yr
No. 2 Fuel Oil Usage =	0	gal/yr, and
No. 4 Fuel Oil Usage =	0	gal/yr, and
Refinery Blend, and Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and
Propane Usage =	0	gal/yr, and
Butane Usage =	0	gal/yr, and
Used/Waste Oil Usage =	0	gal/yr, and
		0.50 % sulfur
		0.50 % sulfur
		1.00 % sulfur
		0.20 gr/100 ft3 sulfur
		0.22 gr/100 ft3 sulfur
		1.00 % sulfur
		0.65 % ash
		0.40 % chlorine,
		0.040 % lead

Unlimited/Uncontrolled Emissions

CO ₂ e Fraction	Emission Factor (units)							Greenhouse Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential
CO ₂	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
CH ₄	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH ₄	21
N ₂ O	2.2	0.26	0.19	0.53	0.9	0.9	0.18	Nitrous oxide	N ₂ O	310

CO ₂ e Fraction	Unlimited/Uncontrolled Potential to Emit (tons/yr)						
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)
CO ₂	45,241	0	0	0	0	0	0
CH ₄	0.94	0.00	0.00	0	0	0	0
N ₂ O	0.83	0.00	0.00	0	0	0	0
Total	45,243	0	0	0	0	0	0

CO₂e for Worst Case Fuel* (tons/yr)
45,517

CO ₂ e Equivalent Emissions (tons/yr) 2013	45511	0	0	0	0	0	0
CO ₂ e Equivalent Emissions (tons/yr) 2009	45517	0	0	0	0	0	0

Methodology

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.

Abbreviations

PTE = Potential to Emit
 CO₂ = Carbon Dioxide
 CH₄ = Methane
 N₂O = Nitrogen Dioxide

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
- 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).

**Appendix A.2: Limited Emissions Calculations
Dryer/Mixer Process**

Company Name: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

The following calculations determine the limited emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =	250	ton/hr
Annual Asphalt Production Limitation =	1,238,000	ton/yr
PM Dryer/Mixer Limitation =	0.253	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.115	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.142	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

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.253	0.253	0.253	156.4	156.4	156.4	156.4
PM10*	0.115	0.115	0.115	70.9	70.9	70.9	70.9
PM2.5*	0.142	0.142	0.142	87.9	87.9	87.9	87.9
SO2**	0.003	0.011	0.058	2.1	6.8	35.9	2.1
NOx**	0.026	0.055	0.055	16.1	34.0	34.0	16.1
VOC**	0.032	0.032	0.032	19.8	19.8	19.8	19.8
CO**	0.130	0.130	0.130	80.5	80.5	80.5	80.5
Hazardous Air Pollutant							
HCl			2.10E-04			0.13	0.0
Antimony	1.80E-07	1.80E-07	1.80E-07	1.11E-04	1.11E-04	1.11E-04	0.0
Arsenic	5.60E-07	5.60E-07	5.60E-07	3.47E-04	3.47E-04	3.47E-04	0.0
Beryllium	negl	negl	negl	negl	negl	negl	negl
Cadmium	4.10E-07	4.10E-07	4.10E-07	2.54E-04	2.54E-04	2.54E-04	0.0
Chromium	5.50E-06	5.50E-06	5.50E-06	3.40E-03	3.40E-03	3.40E-03	0.0
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.61E-05	1.61E-05	1.61E-05	0.0
Lead	6.20E-07	1.50E-05	1.50E-05	3.84E-04	9.29E-03	9.29E-03	0.0
Manganese	7.70E-06	7.70E-06	7.70E-06	4.77E-03	4.77E-03	4.77E-03	0.0
Mercury	2.40E-07	2.60E-06	2.60E-06	1.49E-04	1.61E-03	1.61E-03	0.0
Nickel	6.30E-05	6.30E-05	6.30E-05	3.90E-02	3.90E-02	3.90E-02	0.0
Selenium	3.50E-07	3.50E-07	3.50E-07	2.17E-04	2.17E-04	2.17E-04	0.0
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	2.48E-02	2.48E-02	2.48E-02	0.0
Acetaldehyde			1.30E-03			0.80	0.0
Acrolein			2.60E-05			1.61E-02	0.0
Benzene	3.90E-04	3.90E-04	3.90E-04	0.24	0.24	0.24	0.2
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.15	0.15	0.15	0.1
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	1.92	1.92	1.92	1.9
Hexane	9.20E-04	9.20E-04	9.20E-04	0.57	0.57	0.57	0.6
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.03	0.03	0.03	0.0
MEK			2.00E-05			0.01	0.0
Propionaldehyde			1.30E-04			0.08	0.0
Quinone			1.60E-04			0.10	0.0
Toluene	1.50E-04	2.90E-03	2.90E-03	0.09	1.80	1.80	0.1
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.12	0.54	0.54	0.1
Xylene	2.00E-04	2.00E-04	2.00E-04	0.12	0.12	0.12	0.1

Total HAPs 3.32

Worst Single HAP 1.9189 (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

HAP = Hazardous Air Pollutant

HCl = Hydrogen Chloride

PAH = Polyaromatic Hydrocarbon

SO2 = Sulfur Dioxide

**Appendix A.2: Limited Emissions Calculations
Greenhouse Gas (CO₂e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

Company Name: Dave O'Mara Contractor, Inc., Plant #7
Source Address: Portable
Permit No.: F027-25301-05227
Revision No.: 027-33388-05227
Reviewer: Brian Wright
Date: 7/23/2013

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production = ton/hr
 Maximum Annual Asphalt Production = ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Greenhouse Gas Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO ₂ e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO ₂	33	33	33	1	20,427	20,427	20,427	20,613
CH ₄	0.0120	0.0120	0.0120	21	7.4	7.4	7.4	
N ₂ O				310	0	0	0	
Total					20,434	20,434	20,434	
					CO ₂ e Equivalent Emissions (tons/yr) 2009	20,583	20,583	20,583
					CO ₂ e Equivalent Emissions (tons/yr) 2013	20,613	20,613	20,613

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 N₂O 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.2: Limited Emissions Calculations
Dryer/Mixer Slag Processing**

Company Name: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

The following calculations determine the limited emissions from the processing of slag in the aggregate drying/mixing

Steel Slag Usage Limitation =

371,400

 ton/yr
 SO2 Steel Slag Limitation =

0.0014

 lb/ton of slag processed

0.66

 % sulfur

	Emission Factor or Limitation (lb/ton)*	Limited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.0014	0.26

Methodology

* 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]

Abbreviations

SO2 = Sulfur Dioxide

Appendix A.2: Emissions Calculations

Natural Gas Combustion Only

Hot Oil Heater

Company Name: Brooks Construction, Inc.
Source Location: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
2.0	1020	17.2

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100	5.5	84
					**see below		
Potential Emission in tons/yr	0.02	0.07	0.07	0.01	0.86	0.05	0.72

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
 PM2.5 emission factor is filterable and condensable PM2.5 combined.
 **Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas
 Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
 Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

Emission Factor in lb/MMcf	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.80E-05	1.03E-05	6.44E-04	1.55E-02	2.92E-05	1.62E-02

Emission Factor in lb/MMcf	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	4.29E-06	9.45E-06	1.20E-05	3.26E-06	1.80E-05	4.71E-05
					Total HAPs	1.62E-02
					Worst HAP	1.55E-02

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	1,031	0.0	0.0
Summed Potential Emissions in tons/yr	1,031		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	1,037		
CO2e Total in tons/yr based on 10/30/2009 federal GWPs	1,037		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).
 CO2e (tons/yr) based on 10/30/2009 federal GWPs = 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
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Brooks Construction, Inc.
Source Location: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Maximum Hot Oil Heater Fuel Input Rate =	2.00	MMBtu/hr						
Natural Gas Usage =	18	MMCF/yr						
No. 2 Fuel Oil Usage =	125,143	gal/yr, and	0.50	% sulfur				
Refinery Blend (No. 2 and No. 6) Fuel Oil Usage =	125,143	gal/yr, and	1.00	% sulfur				
Waste Oil Usage =	125,143	gal/yr, and	1.00	% sulfur	0.65	% ash	0.40	% chlorine
							0.04	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)				Unlimited/Uncontrolled Potential to Emit (tons/yr)				
	Hot Oil Heater				Hot Oil Heater				
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Refinery Blend Fuel Oil** (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	Refinery Blend Fuel Oil** (tons/yr)	Used/ Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)
PM	1.9	2.0	12.41	41.6	0.02	0.13	0.78	2.60	2.60
PM10/PM2.5	7.6	3.3	13.91	33.15	0.07	0.21	0.87	2.07	2.07
SO2	0.6	71.0	0.0	147.0	0.01	4.44	0.00	9.20	9.20
NOx	100	20.0	55.0	19.0	0.88	1.25	3.44	1.19	3.44
VOC	5.5	0.20	0.28	1.0	0.05	0.01	0.02	0.06	0.06
CO	84	5.0	5.0	5.0	0.74	0.31	0.31	0.31	0.74
Hazardous Air Pollutant									
HCl				26.4				1.65	1.65
Antimony			5.25E-03	negl.			3.29E-04	negl.	3.29E-04
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.1E-01	1.75E-06	3.50E-05	8.26E-05	6.88E-03	6.88E-03
Beryllium	1.2E-05	4.2E-04	2.78E-05	negl.	1.05E-07	2.63E-05	1.74E-06	negl.	2.63E-05
Cadmium	1.1E-03	4.2E-04	3.98E-04	9.3E-03	9.64E-06	2.63E-05	2.49E-05	5.82E-04	5.82E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	2.0E-02	1.23E-05	2.63E-05	5.29E-05	1.25E-03	1.25E-03
Cobalt	8.4E-05		6.02E-03	2.1E-04	7.36E-07		3.77E-04	1.31E-05	3.77E-04
Lead	5.0E-04	1.3E-03	1.51E-03	2.2	4.38E-06	7.88E-05	9.45E-05	1.38E-01	0.14
Manganese	3.8E-04	8.4E-04	3.00E-03	6.8E-02	3.33E-06	5.26E-05	1.88E-04	4.25E-03	4.25E-03
Mercury	2.6E-04	4.2E-04	1.13E-04		2.28E-06	2.63E-05	7.07E-06		2.63E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	1.1E-02	1.84E-05	2.63E-05	5.29E-03	6.88E-04	5.29E-03
Selenium	2.4E-05	2.1E-03	6.83E-04	negl.	2.10E-07	1.31E-04	4.27E-05	negl.	1.31E-04
1,1,1-Trichloroethane			2.36E-04				1.48E-05		1.48E-05
Benzene	2.1E-03		2.14E-04		1.84E-05		1.34E-05		1.84E-05
Bis(2-ethylhexyl)phthalate				2.2E-03				1.38E-04	1.38E-04
Dichlorobenzene	1.2E-03			8.0E-07	1.05E-05			5.01E-08	1.05E-05
Ethylbenzene			6.36E-05				3.98E-06		3.98E-06
Formaldehyde	7.5E-02	6.10E-02	3.30E-02		6.57E-04	3.82E-03	2.06E-03		3.82E-03
Hexane	1.8E+00				1.58E-02				0.02
Phenol				2.4E-03				1.50E-04	1.50E-04
Toluene	3.4E-03		6.20E-03		2.98E-05		3.88E-04		3.88E-04
Total PAH Haps	negl.		1.13E-03	3.9E-02	negl.		7.07E-05	2.45E-03	2.45E-03
Polycyclic Organic Matter		3.30E-03				2.06E-04			2.06E-04
Xylene			1.09E-04				6.82E-06		6.82E-06
Total HAPs =					1.65E-02	4.45E-03	9.05E-03	1.81	1.83

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 and Refinery Blend: 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
 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

** Emission Factors for Refinery Blend not available in AP-42 Chapter 11.1. Therefore, assumes Refinery Blend Fuel Oil emission factors equal to No. 6 Fuel Oil emission factors.

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: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Brooks Construction, Inc.
Source Location: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
46.0	1020	394.6

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.37	1.50	1.50	0.12	19.73	1.09	16.57

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

Emission Factor in lb/MMcf	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	4.1E-04	2.4E-04	1.5E-02	0.36	6.7E-04	3.7E-01

Emission Factor in lb/MMcf	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	9.9E-05	2.2E-04	2.8E-04	7.5E-05	4.1E-04	1.1E-03
					Total HAPs	0.37
					Worst HAP	0.36

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	23,678	0.5	0.4
Summed Potential Emissions in tons/yr	23,679		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	23,818		
CO2e Total in tons/yr based on 10/30/2009 federal GWPs	23,822		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).
CO2e (tons/yr) based on 10/30/2009 federal GWPs = 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: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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 =	1,238,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.32	0.36	NA	0.69
Organic PM	3.4E-04	2.5E-04	NA	0.21	0.157	NA	0.37
TOC	0.004	0.012	0.001	2.57	7.54	0.681	10.8
CO	0.001	0.001	3.5E-04	0.84	0.730	0.218	1.78

NA = Not Applicable (no AP-42 Emission Factor)

PM/HAPs	0.015	0.018	0	0.033
VOC/HAPs	0.038	0.096	0.010	0.144
non-VOC/HAPs	2.0E-04	2.0E-05	5.2E-05	2.7E-04
non-VOC/non-HAPs	0.19	0.11	0.05	0.34

Total VOCs	2.42	7.54	0.6	10.6
Total HAPs	0.05	0.11	0.010	0.18
Worst Single HAP				0.055
				(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 = $0.000181 + 0.00141(-V)^{((0.0251)(T+460)-20.43)}$

Organic PM Ef = $0.00141(-V)^{((0.0251)(T+460)-20.43)}$

TOC Ef = $0.0172(-V)^{((0.0251)(T+460)-20.43)}$

CO Ef = $0.00558(-V)^{((0.0251)(T+460)-20.43)}$

Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):

PM/PM10 Ef = $0.000332 + 0.00105(-V)^{((0.0251)(T+460)-20.43)}$

Organic PM Ef = $0.00105(-V)^{((0.0251)(T+460)-20.43)}$

TOC Ef = $0.0504(-V)^{((0.0251)(T+460)-20.43)}$

CO Ef = $0.00488(-V)^{((0.0251)(T+460)-20.43)}$

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: Brooks Construction, Inc.
 Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
 Permit Number: F003-33778-00374
 Reviewer: Brian Wright

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	5.5E-04	7.4E-04	NA	1.3E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	5.9E-05	2.2E-05	NA	8.1E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.5E-04	2.0E-04	NA	3.5E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	4.0E-05	8.8E-05	NA	1.3E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.6E-05	0	NA	1.6E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	4.6E-06	0	NA	4.6E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	4.0E-06	0	NA	4.0E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	4.9E-06	0	NA	4.9E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	1.6E-05	1.5E-05	NA	3.1E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	2.2E-04	3.3E-04	NA	5.5E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	7.8E-07	0	NA	7.8E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.1E-04	2.4E-04	NA	3.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.6E-03	1.6E-03	NA	3.2E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	9.9E-07	0	NA	9.9E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	5.0E-03	8.3E-03	NA	0.013
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	2.6E-03	2.9E-03	NA	5.5E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	4.6E-05	4.7E-05	NA	9.4E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	1.7E-03	2.8E-03	NA	4.5E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	3.2E-04	6.9E-04	NA	1.0E-03
Total PAH HAPs							0.013	0.018	NA	0.030
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	2.5E-03	0	0	2.5E-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)**

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	2.42	7.54	0.64	10.60
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	1.7E-01	2.0E-02	4.4E-02	0.231
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	1.2E-03	4.1E-03	3.1E-04	0.006
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	1.8E-02	8.3E-02	4.8E-03	0.106
Total non-VOC/non-HAPS					7.30%	1.40%	0.188	0.106	0.050	0.34
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.3E-03	2.4E-03	3.5E-04	4.1E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	2.5E-04	3.7E-04	6.5E-05	6.8E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	1.3E-03	2.9E-03	3.3E-04	4.5E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	3.3E-04	1.2E-03	8.9E-05	1.6E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	5.4E-06	3.0E-04	1.4E-06	3.1E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	3.9E-04	1.7E-03	1.0E-04	2.2E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	2.8E-03	0	7.5E-04	3.6E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	7.2E-03	2.9E-03	1.9E-03	0.012
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	2.3E-03	5.2E-02	6.0E-04	0.055
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	3.9E-03	7.5E-03	1.0E-03	0.012
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	4.6E-05	2.3E-05	1.2E-05	8.2E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	2.0E-05	0	2.0E-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%	1.9E-04	4.1E-04	5.0E-05	6.4E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	2.0E-04	0	5.2E-05	2.5E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	5.4E-03	4.7E-03	1.4E-03	0.012
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	3.3E-05	0	8.9E-06	4.2E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.1E-02	1.5E-02	2.8E-03	0.028
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	2.1E-03	4.3E-03	5.4E-04	6.9E-03
Total volatile organic HAPs					1.50%	1.30%	0.039	0.098	0.010	0.147

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: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Note: Since the emissions from the storage piles are minimal, the limited emissions are equal to the unlimited emissions.

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$ <p>where E_f = emission factor (lb/acre/day) s = silt content (wt %) p = 125 days of rain greater than or equal to 0.01 inches f = 15 % of wind greater than or equal to 12 mph</p>

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.75	0.412	0.144
Limestone	1.6	1.85	0.75	0.253	0.089
RAP	0.5	0.58	0.75	0.079	0.028
Gravel	1.6	1.85	0.75	0.253	0.089
Shingles	0.5	0.58	1.00	0.106	0.037
Slag	3.8	4.40	0.75	0.602	0.211
Totals				1.71	0.60

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.

RAP = recycled asphalt pavement

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
Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^k \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

where: E_f = Emission factor (lb/ton)

k (PM) = 0.74 = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
 k (PM10) = 0.35 = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
 k (PM2.5) = 0.053 = particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
 U = 10.2 = worst case annual mean wind speed (Source: NOAA, 2006*)
 M = 4.0 = material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)

E_f (PM) = 2.27E-03 lb PM/ton of material handled
 E_f (PM10) = 1.07E-03 lb PM10/ton of material handled
 E_f (PM2.5) = 1.62E-04 lb PM2.5/ton of material handled

Annual Asphalt Production Limitation = 1,238,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 1,176,100 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	1.33	0.63	0.10
Front-end loader dumping of materials into feeder bins	1.33	0.63	0.10
Conveyor dropping material into dryer/mixer or batch tower	1.33	0.63	0.10
Total (tons/yr)	4.00	1.89	0.29

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 additives
 *Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

Material Screening and Conveying (AP-42 Section 19.2.2)

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 19.2.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	3.18	1.41
Screening	0.025	0.0087	14.70	5.12
Conveying	0.003	0.0011	1.76	0.65
Limited Potential to Emit (tons/yr) =			19.64	7.17

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: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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	= 1,238,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	= 5.0%	
Maximum Material Handling Throughput	= 1,176,100	tons/yr
Maximum Asphalt Cement/Binder Throughput	= 61,900	tons/yr
No. 2 Fuel Oil Limitation	= 0	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	5.3E+04	2.1E+06	350	0.066	3480.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	5.3E+04	8.9E+05	350	0.066	3480.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	1.7E+03	8.3E+04	150	0.028	48.8
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.7E+03	2.1E+04	150	0.028	48.8
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	0.0E+00	0.0E+00	150	0.028	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	0.0E+00	0.0E+00	150	0.028	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	2.8E+05	5.4E+06	500	0.095	26517.4
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	2.8E+05	4.2E+06	500	0.095	26517.4
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	5.2E+04	2.1E+06	350	0.066	3419.3
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	5.2E+04	8.8E+05	350	0.066	3419.3
Total					7.7E+05	1.6E+07			6.7E+04

Average Vehicle Weight Per Trip	= 20.3	tons/trip
Average Miles Per Trip	= 0.087	miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

Mitigated Emission Factor, E_{ext}	= $E \cdot [(365 - P)/365]$
where P =	125
	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, E_{ext}	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	10.61	2.70	0.27	6.97	1.78	0.18	3.49	0.89	0.09
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	10.61	2.70	0.27	6.97	1.78	0.18	3.49	0.89	0.09
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.149	0.038	0.00	0.098	0.025	2.5E-03	0.049	0.012	1.2E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.149	0.038	0.00	0.098	0.025	2.5E-03	0.049	0.012	1.2E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	80.80	20.59	2.06	53.13	13.54	1.35	26.56	6.77	0.68
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	80.80	20.59	2.06	53.13	13.54	1.35	26.56	6.77	0.68
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	10.42	2.66	0.27	6.85	1.75	0.17	3.43	0.87	0.09
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	10.42	2.66	0.27	6.85	1.75	0.17	3.43	0.87	0.09
Totals		203.95	51.98	5.20	134.10	34.18	3.42	67.05	17.09	1.71

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

Company Name: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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	1,238,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	1,176,100	tons/yr
Maximum Asphalt Cement/Binder Throughput	61,900	tons/yr
No. 2 Fuel Oil Limitation	0	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	5.3E+04	2.1E+06	350	0.066	3480.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	5.3E+04	8.9E+05	350	0.066	3480.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	1.7E+03	8.3E+04	150	0.028	48.8
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.7E+03	2.1E+04	150	0.028	48.8
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	0.0E+00	0.0E+00	150	0.028	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	0.0E+00	0.0E+00	150	0.028	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	2.8E+05	5.4E+06	500	0.095	26517.4
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	2.8E+05	4.2E+06	500	0.095	26517.4
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	5.2E+04	2.1E+06	350	0.066	3419.3
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	5.2E+04	8.9E+05	350	0.066	3419.3
Total					7.7E+05	1.6E+07			6.7E+04

Average Vehicle Weight Per Trip = $\frac{20.3}{0.087}$ tons/trip
 Average Miles Per Trip = $\frac{20.3}{0.087}$ miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL^2)^{0.65} * (W/3)^{1.5} - C]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	0.00038	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$
 where p = $\frac{125}{365}$ days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f =	0.66	0.13	0.02	lb/mile
Mitigated Emission Factor, E_{ext} =	0.60	0.12	0.02	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)	1.14	0.22	0.03	1.05	0.20	0.03	0.52	0.10	0.02
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.14	0.22	0.03	1.05	0.20	0.03	0.52	0.10	0.02
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.016	0.003	4.6E-04	0.015	0.003	4.2E-04	0.007	1.4E-03	2.1E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.016	0.003	4.6E-04	0.015	0.003	4.2E-04	0.007	1.4E-03	2.1E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	8.72	1.70	0.25	7.97	1.55	0.23	3.99	0.78	0.11
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	8.72	1.70	0.25	7.97	1.55	0.23	3.99	0.78	0.11
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.12	0.22	0.03	1.03	0.20	0.03	0.51	0.10	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.12	0.22	0.03	1.03	0.20	0.03	0.51	0.10	0.01
Totals		22.00	4.28	0.63	20.12	3.91	0.58	10.06	1.96	0.29

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
Cold Mix Asphalt Production and Stockpiles**

Company Name: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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 = 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%	0.0	0.0	#DIV/0!
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	0.0	0.0	#DIV/0!
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	0.0	0.0	#DIV/0!
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	0.0	0.0	#DIV/0!
Other asphalt with solvent binder	25.9%	2.5%	0.0	0.0	#DIV/0!
Worst Case Limited PTE of VOC =				0.0	

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) =	0.00
Limited PTE of Single HAP (tons/yr) =	0.00 Xylenes

Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents*

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
Total Organic HAPs		26.08%	0.33%	1.29%	0.68%	0.19%
Worst Single HAP		9.00%	0.31%	0.50%	0.23%	0.07%
		Xylenes	Naphthalene	Xylenes	Xylenes	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: Brooks Construction, Inc.
Source Address: 2711 Banks Avenue, Fort Wayne, IN 46802
Permit Number: F003-33778-00374
Reviewer: Brian Wright

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:

$$\begin{aligned} \text{Gasoline Throughput} &= 0 \text{ gallons/day} \\ &= 0.0 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
Total		0.00

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) =	0.00	
Limited PTE of Single HAP (tons/yr) =	0.00	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.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

April 1, 2014

Mr. Tim Sievers
Brooks Construction Company, Inc.
6525 Ardmore Avenue
Fort Wayne, IN 46802

Re: Public Notice
Brooks Construction Company, Inc.
Permit Level: FESOP Renewal
Permit Number: 003-33778-00374

Dear Mr. Sievers:

Enclosed is a copy of your draft FESOP Renewal, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has submitted the draft permit package to the Allen County Library, 900 Library Plaza in Fort Wayne, Indiana. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper. The OAQ has requested that the Journal Gazette in Fort Wayne, Indiana publish this notice no later than April 3, 2014.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Brian Wright, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 4-6544 or dial (317) 234-6544.

Sincerely,

Greg Hotopp

Greg Hotopp
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter. dot 3/27/08



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Notice of Public Comment

April 1, 2014

Brooks Construction Company, Inc.

003-33778-00374

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has been placed in the Legal Advertising section of your local newspaper. The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana's Air Permitting Program.

Please Note: *If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.*

Enclosure
PN AAA Cover.dot 6/13/13



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Governor

Thomas W. Easterly
Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

April 1, 2014

Journal Gazette
600 W Main Street
PO Box 100
Fort Wayne, IN 46801

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Books Construction Company, Allen County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than April 3, 2014.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1003, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Greg Hotopp at 800-451-6027 and ask for extension 4-3493 or dial 317-234-3493.

Sincerely,

Greg Hotopp

Greg Hotopp
Permit Branch
Office of Air Quality

Permit Level: FESOP Renewal
Permit Number: 003-33778-00374

Enclosure
PN Newspaper.dot 6/13/2013



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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

April 1, 2014

To: Allen County Public Library

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

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Brooks Construction Company, Inc.
Permit Number: 003-33778-00374

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Request to publish the Notice of 30-day Period for Public Comment
- Draft Permit and Technical Support Document


You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. **Please make this information readily available until you receive a copy of the final package.**

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. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library.dot 6/13/2013

Mail Code 61-53

IDEM Staff	GHOTOPP 4/1/2014 Brooks Construction Inc 003-33778-00374 Draft		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Tim Sievers Brooks Construction Inc 6525 Ardmore Ave Ft Wayne IN 46802 (Source CAATS)										
2		John Brooks Executive VP Brooks Construction Inc 6525 Ardmore Ave Ft Wayne IN 46809 (RO CAATS)										
3		Daniel & Sandy Trimmer 15021 Yellow River Road Columbia City IN 46725 (Affected Party)										
4		Duane & Deborah Clark Clark Farms 6973 E. 500 S. Columbia City IN 46725 (Affected Party)										
5		Allen County Public Library 900 Library Plaza, P.O. Box 2270 Fort Wayne IN 46802 (Library)										
6		Fort Wayne City Council and Mayors Office 200 E Berry Street Ste 120 Fort Wayne IN 46802 (Local Official)										
7		Mr. Jeff Coburn Plumbers & Steamfitters, Local 166 2930 W Ludwig Rd Fort Wayne IN 46818-1328 (Affected Party)										
8		Allen Co. Board of Commissioners 200 E Berry Street Ste 410 Fort Wayne IN 46802 (Local Official)										
9		Fort Wayne-Allen County Health Department 200 E Berry St Suite 360 Fort Wayne IN 46802 (Health Department)										
10												
11												
12												
13												
14												
15												

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
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