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 Wayne Asphalt & Construction Co., Inc. in Allen County

Operating Permit No. F003-33445-03212

The Indiana Department of Environmental Management (IDEM) has received an application from Wayne Asphalt & Construction Co., Inc. located at 6600 Ardmore Ave, Fort Wayne, IN 46809 for a renewal of its FESOP issued on July 9, 2004. If approved by IDEM's Office of Air Quality (OAQ), this proposed renewal would allow Wayne Asphalt & Construction Co., Inc. to continue to operate its existing stationary hot mix batch/drum asphalt manufacturing plant.

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. These corrections, changes, and removals may include Title I changes. 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
2200 Lower Huntington Road
Ft. Wayne, IN 46809

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 F003-33445-03212 in all correspondence.

Comments should be sent to:

Nida Habeeb
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 4-8531
Or dial directly: (317) 234-8531
Fax: (317)-232-6749 attn: Nida Habeeb
E-mail: nhabeb@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 Nida Habeeb of my staff at the above address.

Jason R. Krawczyk, Section Chief
Permits Branch
Office of Air Quality

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DRAFT

Federally Enforceable State Operating Permit Renewal
OFFICE OF AIR QUALITY

Wayne Asphalt & Construction Co., Inc.
6600 Ardmore Ave
Fort Wayne, Indiana 46809-9703

(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. F003-33445-03212	
Issued by: Jason R. Krawczyk, Section Chief Permits Branch Office of Air Quality	Issuance Date: 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 hot mix batch/drum asphalt manufacturing plant.

Source Address:	6600 Ardmore Ave, Fort Wayne, Indiana 46809-9703
General Source Phone Number:	260-747-7531
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:

Scenario A

(a) One (1) hot drum mixer, identified as EU#4, installed in 1996, with a maximum capacity of 190 tons of aggregate per hour, exhausting to Stack #1 and equipped with a baghouse and cyclone in series for particulate control and one (1) natural gas-fired aggregate dryer with low NO_X burners and heat input capacity of 80.2 MMBtu/hr.

Note: The aggregate dryer is common to both Scenario A (drum mix) and Scenario B (batch mix) operations.

The one (1) baghouse, exhausting through Stack #1, is common to the aggregate dryer, the batch mixer, and the drum mixer.

The drum mixer and the batch mixer cannot physically operate at the same time.

Under NSPS Subpart I, the hot asphalt drum mixer and hot asphalt batch mixer are considered affected facilities.

Scenario B

(b) One (1) hot batch mixer, identified as EU#5, installed in 1968, with a maximum capacity of 80 tons of aggregate per hour, exhausting to Stack #1 and equipped with a baghouse and cyclone in series for particulate control.

Note: The aggregate dryer is common to both Scenario A (drum mix) and Scenario B (batch mix) operations.

The one (1) baghouse, exhausting through Stack #1, is common to the aggregate dryer, the batch mixer, and the drum mixer.

The drum mixer and the batch mixer cannot physically operate at the same time.

Under NSPS Subpart I, the hot asphalt drum mixer and hot asphalt batch mixer are considered affected facilities.

(c) One (1) natural gas-fired oil heater, identified as EU#12, installed in 1968 with a heat input capacity of 2.10 MMBtu/hr.

(d) One (1) Hot Mix Surge Bin, approved for construction in 2008, with a maximum capacity of 200 tons.

(e) One (1) liquid asphalt cement storage tank, approved for construction in 2014, with a maximum capacity of 30,000 gallons.

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

This stationary source also includes the following insignificant activities:

(a) One (1) natural gas-fired roof top furnace with a heat input capacity of 0.080 MMBtu/hr.

(b) Combustion source flame safety purging on startup.

(c) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.

(d) Equipment used exclusively for the following: Packaging lubricants and greases, filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.

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

(f) Closed loop heating and cooling systems.

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

(h) Heat exchanger cleaning and repair.

(i) Process vessel degassing and cleaning to prepare for internal repairs.

(j) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment.

(k) Aggregate storage piles consisting of sand and recycled asphalt pavement.

(l) Material handling operations consisting of scalp-off screening operation and conveying operation, only. The limestone and RAP are put through a screen deck to scalp-off any oversized material. A screen deck for limestone has a throughput of 200 tons per hour, and a screen deck for RAP that has a throughput of 80 tons per hour.

Under NSPS Subpart I, the material handling operations are considered affected facilities.

Note: These two screen decks operate when the drum mixer is operating. They are not used for the batch mixer. There is no conveying operation at this source.

(m) Paved roads.

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, F003-33445-03212, 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 F003-33445-03212 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 CO_2 equivalent emissions (CO_2e) per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

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

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

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

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

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

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

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

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

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

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

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

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
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:

Scenario A

(a) One (1) hot drum mixer, identified as EU#4, installed in 1996, with a maximum capacity of 190 tons of aggregate per hour, exhausting to Stack #1 and equipped with a baghouse and cyclone in series for particulate control and one (1) natural gas-fired aggregate dryer with low NO_X burners and heat input capacity of 80.2 MMBtu/hr.

Note: The aggregate dryer is common to both Scenario A (drum mix) and Scenario B (batch mix) operations.

The one (1) baghouse, exhausting through Stack #1, is common to the aggregate dryer, the batch mixer, and the drum mixer.

The drum mixer and the batch mixer cannot physically operate at the same time.

Under NSPS Subpart I, the hot asphalt drum mixer and hot asphalt batch mixer are considered affected facilities.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Particulate Matter (PM) [326 IAC 2-2]

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

(a) The amount of hot-mix asphalt processed by the one (1) hot drum mixer, identified as EU#4, shall not exceed 1,490,400 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 0.298 pounds per ton.

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

D.1.2 FESOP Limits [326 IAC 2-8-4][326 IAC 2-2][326 IAC 8-1-6]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

(a) The amount of hot-mix asphalt processed by the one (1) hot drum mixer, identified as EU#4, shall not exceed 1,490,400 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM10 emissions from the aggregate dryer shall not exceed 0.119 pounds per ton of asphalt processed.

(c) The PM2.5 emissions from the aggregate dryer shall not exceed 0.122 pounds per ton of asphalt processed.

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

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

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

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

D.1.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities and any 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.1.4 Testing Requirements [326 IAC 2-1.1-11]

Not later than five (5) years from the most recent compliant stack test, in order to demonstrate compliance with Conditions D.1.1 and D.1.2, the Permittee shall perform PM, PM10, and PM2.5 testing of the dryer/mixer for the hot drum mix operation, utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable particulate matter.

D.1.5 Particulate Control

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

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

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

D.1.6 Visible Emissions Notations

(a) Visible emission notations of the conveyors, screens, material transfer points, and dryer/mixer stack (Stack #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.1.7 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer at least once per day when the dryer/mixer is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for this unit is a pressure drop between 2.0 and 6.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

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

D.1.8 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

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

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

D.1.9 Record Keeping Requirements

(a) To document the compliance status with Conditions D.1.1(a) and D.1.2(a) the Permittee shall keep monthly records of the amount of asphalt processed through the hot drum mixer (EU#4).

(b) To document the compliance status with Condition D.1.6, the Permittee shall maintain records of the visible emission notations once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(c) To document the compliance status with Condition D.1.7, the Permittee shall maintain records once per day of the pressure drop readings. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

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

D.1.10 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.1.1(a) and D.1.2(a), shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meet 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:

Scenario B

(b) One (1) hot batch mixer, identified as EU#5, installed in 1968, with a maximum capacity of 80 tons of aggregate per hour, exhausting to Stack #1 and equipped with a baghouse and cyclone in series for particulate control.

Note: The aggregate dryer is common to both Scenario A (drum mix) and Scenario B (batch mix) operations.

The one (1) baghouse, exhausting through Stack #1, is common to the aggregate dryer, the batch mixer, and the drum mixer.

The drum mixer and the batch mixer cannot physically operate at the same time.

Under NSPS Subpart I, the hot asphalt drum mixer and hot asphalt batch mixer are considered affected facilities.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 Particulate Matter (PM) [326 IAC 2-2]

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

(a) The amount of hot-mix asphalt processed by the one (1) hot batch mixer, identified as EU#5, shall not exceed 0.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

D.2.2 FESOP Limits [326 IAC 2-8-4][326 IAC 2-2][326 IAC 8-1-6]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

(a) The amount of hot-mix asphalt processed by the one (1) hot batch mixer, identified as EU#5, shall not exceed 0.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit, combined with the limited potential to emit PM10, PM2.5 and CO from all other emission units at this source, shall limit the source-wide total potential to emit of 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 Permit Program) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

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

D.2.3 Record Keeping Requirements

(a) To document the compliance status with Conditions D.2.1(a) and D.2.2(a) the Permittee shall keep monthly records of the amount of asphalt processed through the hot batch mixer (EU#5).

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

D.2.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.2.1(a) and D.2.2(a), shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meet 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.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(c) One (1) natural gas-fired oil heater, identified as EU#12, installed in 1968 with a heat input capacity of 2.10 MMBtu/hr.

(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.3.1 Particulate Emission Limits [326 IAC 6-2]

Pursuant to 326 IAC 6-2-4, the particulate emissions from the one (1) natural gas-fired oil heater shall not exceed six tenths (0.8) pounds of particulate matter per MMBtu heat input.

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Scenario A

(a) One (1) hot drum mixer, identified as EU#4, installed in 1996, with a maximum capacity of 190 tons of aggregate per hour, exhausting to Stack #1 and equipped with a baghouse and cyclone in series for particulate control and one (1) natural gas-fired aggregate dryer with low NO_X burners and heat input capacity of 80.2 MMBtu/hr.

Note: The aggregate dryer is common to both Scenario A (drum mix) and Scenario B (batch mix) operations.

The one (1) baghouse, exhausting through stack Stack #1, is common to the aggregate dryer, the batch mixer, and the drum mixer.

The drum mixer and the batch mixer cannot physically operate at the same time.

Under NSPS Subpart I, the hot asphalt drum mixer and hot asphalt batch mixer are considered affected facilities.

Insignificant Activities

(l) Material handling operations consisting of scalp-off screening operation and conveying operation, only. The limestone and RAP are put through a screen deck to scalp-off any oversized material. A screen deck for limestone has a throughput of 200 tons per hour, and a screen deck for RAP that has a throughput of 80 tons per hour.

Under NSPS Subpart I, the material handling operations are considered affected facilities.

Note: These two screen decks operate when the drum mixer is operating. They are not used for the batch mixer. There is no conveying operation at this source.

(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]

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.

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 A of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart I:

(1) 40 CFR 60.90;
(2) 40 CFR 60.91;
(3) 40 CFR 60.92; and
(4) 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: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, Indiana 46809-9703
FESOP Permit No.: F003-33445-03212

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: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, Indiana 46809-9703
FESOP Permit No.: F003-33445-03212

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

□ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16

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

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

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N 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: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, Indiana 46809-9703
FESOP Permit No.: F003-33445-03212
Facility: Aggregate dryer
Parameter: Hot-mix asphalt production for hot drum mixer (EU#4)
Limit: The amount of hot-mix asphalt processed by the one (1) hot drum mixer, identified as EU#4, shall not exceed 1,490,400 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR:_____

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

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

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

FESOP Quarterly Report

Source Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, Indiana 46809-9703
FESOP Permit No.: F003-33445-03212
Facility: Aggregate dryer
Parameter: Hot-mix Asphalt Production for hot batch mixer (EU#5)
Limit: The amount of hot-mix asphalt processed by the one (1) hot batch mixer, identified as EU#5, shall not exceed 0.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR:_____

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

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, Indiana 46809-9703
FESOP Permit No.: F003-33445-03212

Months: _____ to _____ Year: _____

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".

□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Attachment A to
FESOP Permit Renewal No. F003-33445-03212

[Downloaded from the eCFR on May 13, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

40 CFR Part 60, Subpart I—Standards of Performance for Hot Mix Asphalt Facilities

§ 60.90 Applicability and designation of affected facility.

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

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

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

§ 60.91 Definitions.

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

(a) Hot mix asphalt facility means any facility, as described in § 60.90, used to manufacture hot mix asphalt by heating and drying 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:	Wayne Asphalt & Construction Co., Inc.
Source Location:	6600 Ardmore Ave, Fort Wayne, IN 46809
County:	Allen
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
Permit Renewal No.:	F003-33445-03212
Permit Reviewer:	Nida Habeeb

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Wayne Asphalt & Construction Co., Inc. relating to the operation of a stationary hot mix batch/drum asphalt manufacturing plant. On July 19, 2013, Wayne Asphalt & Construction Co., Inc submitted an application to the OAQ requesting to renew its operating permit. Wayne Asphalt & Construction Co., Inc., was issued its first FESOP Renewal F003-17299-03212 on July 9, 2004.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

Scenario A

(a) One (1) hot drum mixer, identified as EU#4, installed in 1996, with a maximum capacity of 190 tons of aggregate per hour, exhausting to Stack #1 and equipped with a baghouse and cyclone in series for particulate control and one (1) natural gas-fired aggregate dryer with low NO_X burners and heat input capacity of 80.2 MMBtu/hr.

Note: The aggregate dryer is common to both Scenario A (drum mix) and Scenario B (batch mix) operations.

The one (1) baghouse, exhausting through Stack #1, is common to the aggregate dryer, the batch mixer, and the drum mixer.

The drum mixer and the batch mixer cannot physically operate at the same time.

Under NSPS Subpart I, the hot asphalt drum mixer and hot asphalt batch mixer are considered affected facilities.

Scenario B

(b) One (1) hot batch mixer, identified as EU#5, installed in 1968, with a maximum capacity of 80 tons of aggregate per hour, exhausting to Stack #1 and equipped with a baghouse and cyclone in series for particulate control.

Note: The aggregate dryer is common to both Scenario A (drum mix) and Scenario B (batch mix) operations.

The one (1) baghouse, exhausting through Stack #1, is common to the aggregate dryer, the batch mixer, and the drum mixer.

The drum mixer and the batch mixer cannot physically operate at the same time.

Under NSPS Subpart I, the hot asphalt drum mixer and hot asphalt batch mixer are considered affected facilities.

(c) One (1) natural gas-fired oil heater, identified as EU#12, installed in 1968 with a heat input capacity of 2.10 MMBtu/hr.

(d) One (1) Hot Mix Surge Bin, approved for construction in 2008, with a maximum capacity of 200 tons.

Insignificant Activities

The source also consists of the following insignificant activities:

(a) One (1) natural gas-fired roof top furnace with a heat input capacity of 0.080 MMBtu/hr.

(b) Combustion source flame safety purging on startup.

(c) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.

(d) Equipment used exclusively for the following: Packaging lubricants and greases, filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.

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

(f) Closed loop heating and cooling systems.

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

(h) Heat exchanger cleaning and repair.

(i) Process vessel degassing and cleaning to prepare for internal repairs.

(j) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment.

(k) Aggregate storage piles consisting of sand and recycled asphalt pavement.

(l) Material handling operations consisting of scalp-off screening operation and conveying operation, only. The limestone and RAP are put through a screen deck to scalp-off any oversized material. A screen deck for limestone has a throughput of 200 tons per hour, and a screen deck for RAP that has a throughput of 80 tons per hour.

Under NSPS Subpart I, the material handling operations are considered affected facilities.

Note: These two screen decks operate when the drum mixer is operating. They are not used for the batch mixer. There is no crushing operation at this source.

(m) Paved roads.

New Emission Units With Negligible Emissions

The two (2) liquid asphalt cement storage tanks at this source will be replaced with one (1) new tank. This new tank will be enclosed. The current hot oil heater, identified as EU#12, for the two (2) tanks will remain as the heat source for the new tank.

The following is a list of the new emission unit:

(a) One (1) liquid asphalt cement storage tank, approved for construction in 2014, with a maximum capacity of 30,000 gallons.

Emission Units Removed From the Source

The following is a list of the emission units being removed:

(a) Two (2) liquid asphalt cement storage tanks, installed in 1968, capacity: 20,000 gallons each.

Existing Approvals

Since the issuance of the FESOP Renewal F003-17299-03212 on July 9, 2004, the source has constructed or has been operating under the following additional approvals:

(a) Administrative Amendment No. F003-25667-03212 issued on January 11, 2008; and

(b) Administrative Amendment No. F003-26211-03212 issued on April 4, 2008.

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
PM2.5	Unclassifiable or attainment effective April 5, 2005, for the annual PM2.5 standard.
PM2.5	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM2.5 standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(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 $PM_{2.5}$, SO_2, and NOx 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 criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-6.1 (Minor Source Operating Permits) applicability.

This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions, from the affected facility to which the New Source Performance Standard is applicable, 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	Greater than 250
PM10	Greater than 250
PM2.5	Greater than 250
SO2	Less than 100
VOC	Less than 100
CO	Greater than 100, Less than 250
NOx	Less than 100
GHGs as CO2e	Less than 100,000
Single HAP	Less than 10
Total HAP	Less than 25

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM, PM10, PM2.5 and CO is equal to or greater than 100 tons per year. However, the Permittee has agreed to limit the source's PM, PM10, PM2.5 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 CO_2 equivalent emissions (CO_2e) 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.

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** as CO2e	Total HAPs	Worst Single HAP
Ducted/Ductable Emissions										
Dryer Fuel Combustion (worst case)	0.67	2.67	2.67	0.21	35.13	1.93	29.51	42,462	0.66	0.63 (hexane)
Dryer/Mixer and Batch Tower (Process)	221.73	88.81	91.02	2.53	19.38	23.85	96.88	24,815	3.99	2.31 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.92	0.05	0.77	1,840	0.02	0.017 (hexane)
Diesel-Fired Generator < 600 HP	0	0	0	0	0	0	0	0	0	0
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	0
Worst Case Emissions	**221.75**	**88.88**	**91.09**	**2.54**	**36.05**	**23.90**	**97.65**	**44,302**	**4.01**	**2.31 (formaldehyde)**
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, and On-Site Yard	0.39	0.39	0.39	0	0	3.68	1.27	0	0.08	0.016 (xylene)
Material Storage Piles	0.43	0.15	0.15	0	0	0	0	0	0	0
Material Processing and Handling	4.81	2.28	0.34	0	0	0	0	0	0	0
Material Screening and Conveying	19.82	6.94	6.94	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	1.79	0.36	0.09	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
Insignificant Combustion (natural gas-fired roof top furnace)	6.5E-04	2.6E-03	2.6E-03	2.1E-04	3.4E-02	1.9E-03	2.9E-02	41	6.5E-4	6.2E-04 (hexane)
Total Fugitive Emissions	**27.25**	**10.12**	**7.91**	**2.1E-04**	**3.4E-02**	**3.69**	**1.30**	**41**	**0.08**	**0.016 (xylene)**
Total Limited/ Controlled Emissions	**249.00**	**99.00**	**99.00**	**2.54**	**36.08**	**27.58**	**98.95**	**44,343**	**4.09**	**2.31 (formaldehyde)**
Title V Major Source Thresholds	N/A	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	N/A	N/A

negl = negligible N/A = Not applicable

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

**$PM_{2.5}$ listed is direct $PM_{2.5}$.

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

(a) 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. GHG emissions are

less than one hundred thousand (<100,000) tons of CO_2 equivalent (CO_2e) emissions per year.

Federal Rule Applicability

(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) 40 CFR 60, Subpart I - Standards for Hot Mix Asphalt Facilities
This hot mix batch/drum asphalt manufacturing plant is still subject to the New Source Performance Standard for (Standards of Performance for Hot Mix Asphalt Facilities) (40 CFR Part 60.90, Subpart I), which is incorporated by reference as 326 IAC 12. This hot mix batch/drum asphalt manufacturing plant meets the definition of a hot-mix asphalt facility as described in 40 CFR 60.91 and was modified after June 11, 1973. The asphalt plant was initially constructed in 1968 as a hot mix batch plant and was then modified in 1996 to add a hot drum mixer (EU#4).

Nonapplicable portions of the NSPS will not be included in the permit. The (1) hot batch mixer, identified as EU#5, the (1) hot drum mixer, identified as EU#4, and the the material handling operations are each still subject to the following portions of Subpart I:

(1) 40 CFR 60 60.90;
(2) 40 CFR 60 60.91;
(3) 40 CFR 60 60.92; and
(4) 40 CFR 60 60.93;

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the source except as otherwise specified in 40 CFR 60, Subpart I.

(b) 40 CFR 60, Subpart Dc - Standards for Small Industrial-Commercial-Institutional Steam Generating Units
The requirements of New Source Performance Standards for (Small Industrial-Commercial-Institutional Steam Generating Units) (40 CFR 60, Subpart Dc) (326 IAC 12) are still not included in the permit for the hot oil heater (EU#12), since it has a maximum design heat input capacity of less than the applicability threshold of ten (10) million British thermal units per hour.

(c) 40 CFR 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984
The requirements of New Source Performance Standards for (Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984) (40 CFR 60, Subpart Kb) (326 IAC 12) are still not included in the permit for the one (1) liquid asphalt cement storage tank, since it was constructed after the rule applicability date of July 23, 1984 and has a capacity of greater than 75 cubic meter (19,813 gallons) but less than 151 cubic meter (39,890 gallons), however, this tank will not store liquid with a maximum true vapor pressure of greater than 15.0 kPa.

(d) 40 CFR 60, Subpart UU - Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture
The requirements of New Source Performance Standard for (Asphalt Processing and Asphalt Roofing Manufacture) (40 CFR 60, Subpart UU) (326 IAC 12) are still not included in the permit for the hot mix asphalt plant. This hot mix asphalt plant is not an asphalt processing plant because it does not blow asphalt, and it is not an asphalt roofing plant because it does not produce asphalt roofing products.

(e) 40 CFR 60, Subpart OOO - Standards of Performance for Non Metallic Mineral Processing Plants
The requirements of New Source Performance Standard for (Nonmetallic Mineral Processing Plants) (40 CFR 60, Subpart OOO) (326 IAC 12) are still not included in the permit for the hot mix asphalt plant, since this hot mix asphalt plant is already subject to the requirements of 40 CFR 60, Subpart I. Therefore, pursuant to 40 CFR 60.670(b), this source is not subject to the requirements of 40 CFR 60, Subpart OOO.

(f) 40 CFR 60, Subpart UUU - Standards of Performance for Calciners and Dryers in Mineral Industries
The requirements of New Source Performance Standard for (Calciners and Dryers in Mineral Industries) (40 CFR 60, Subpart UUU) (326 IAC 12) are still not included in the permit for the hot mix asphalt plant, since this 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.

(g) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(a) 40 CFR 63, Subpart DDDDD - NESHAP for Industrial, Commercial, and Industrial Boilers and Process Heaters
The requirements of National Emission Standards for Hazardous Air Pollutants (NESHAPs) for (Industrial, Commercial and Industrial Boilers and Process Heaters) (40 CFR 63, Subpart DDDDD) (326 IAC 20-95) are still not included in the permit for the furnace and heater at this source, since this hot mix asphalt plant is not a major source of HAPs.

(b) 40 CFR 63, Subpart LLLLL - NESHAP for Asphalt Processing and Asphalt Roofing Manufacturing
The requirements of 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 still not included in the permit for this source, since this 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.

(c) 40 CFR 63, Subpart JJJJJJ - NESHAP for Industrial, Commercial, and Industrial Boilers Area Sources
The requirements of National Emission Standards for Hazardous Air Pollutants (NESHAPs) for (Industrial, Commercial and Industrial Boilers Area Sources) (40 CFR 63, Subpart JJJJJJ) are still not included in the permit for the one (1) natural gas-fire roof top furnace and one (1) hot oil heater at this source, since they each do not meet the definition of a boiler as defined in 40 CFR 63.11237.

(d) 40 CFR 63, Subpart AAAAAAA - NESHAP for Asphalt Processing and Asphalt Roofing Manufacturing Area Source
The requirements of National Emission Standards for Hazardous Air Pollutants (NESHAPs) for (Asphalt Processing and Asphalt Roofing Manufacturing Area Source) (40 CFR 63, Subpart AAAAAAA) are still not included in the permit for this source, since this hot mix asphalt plant does not engage in the preparation of asphalt flux or asphalt roofing materials.

(e) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 12 and 40 CFR Part 63) included in the permit for this source.

State Rule Applicability - Entire Source

The following state rules are applicable to the source:

326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3. A Preventive Maintenance Plan is required for these facilities and any corresponding control devices.

326 IAC 1-7 (Stack Height Provisions)
The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using ambient air quality modeling pursuant to 326 IAC 1-7-4.

326 IAC 2-8-4 (FESOP)
In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

(1) The amount of hot-mix asphalt processed by the one (1) hot drum mixer, identified as EU#4, shall not exceed 1,490,400 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) The PM10 emissions from the aggregate dryer shall not exceed 0.119 pounds per ton of asphalt processed.

(3) The PM2.5 emissions from the aggregate dryer shall not exceed 0.122 pounds per ton of asphalt processed.

(4) The VOC emissions from the aggregate dryer shall not exceed 0.032 pounds per ton of asphalt processed.

(5) The CO emissions from the aggregate dryer not exceed 0.130 pounds per ton of asphalt processed.

Note: The emission limits in (1) through (5) have been added with this Renewal. These changes are Title I changes.

Compliance with these limits, combined with the limited potential to emit PM10, PM2.5 and CO from all other emission units at this source, shall limit the source-wide total potential to emit of 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 Permit Program) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

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

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

(1) The amount of hot-mix asphalt processed by the one (1) hot batch mixer, identified as EU#5, shall not exceed 0.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Note: The source has requested this limitation, since it has no plans to use the hot batch mixer. The emission limit in (1) has been added as part of this renewal in order to make federally enforceable that the one (1) hot batch mixer, identified as EU#5, shall not be operated for the production of asphalt. The emission limit in (1) has been added with this Renewal.

This change is a Title I change.

Compliance with this limit, combined with the limited potential to emit PM10, PM2.5 and CO from all other emission units at this source, shall limit the source-wide total potential to emit of 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 Permit Program) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

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

(1) The amount of hot-mix asphalt processed by the one (1) hot drum mixer, identified as EU#4, shall not exceed 1,490,400 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) PM emissions from the dryer/mixer shall not exceed 0.298 pounds per ton.

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

Note: Emission limits (1) and (2) are being added with this Renewal.

These changes are Title I changes.

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

(1) The amount of hot-mix asphalt processed by the one (1) hot batch mixer, identified as EU#5, shall not exceed 0.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Note: The source has requested this limitation, since it has no plans to use the hot batch mixer. The emission limit in (1) has been added as part of this renewal in order to make federally enforceable that the one (1) hot batch mixer, identified as EU#5, shall not be

operated for the production of asphalt. The emission limit in (1) has been added with this Renewal.

This change is a Title I change.

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

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

326 IAC 2-4.1-1 (Major Sources of HAPs: New Source Toxic Control)
The source wide potential to emit HAP is less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for any combination of HAPs; therefore, the requirements of 326 IAC 2-4.1 are not applicable.

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 Limits), opacity shall meet the following, unless otherwise stated in the permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

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 6.8 because it is not located in Lake County.

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

Hot Drum Mixer with Aggregate Dryer Burner and Hot Batch Mixer

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
Pursuant to 326 IAC 6-2-1(a), the dryer burner is not subject to the requirements of 326 IAC 6-2 since it is not a source of indirect heating, as defined in 326 IAC 1-2-19 "Combustion for Indirect Heating".

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

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
Pursuant to 326 IAC 7-1.1, the dryer burner is not subject to the requirements of 326 IAC 7-1.1, since its potential to emit SO2 is less than twenty-five (25) tons/year, or ten (10) pounds/hour.

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

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

(1) The hot-mix asphalt production rate from the one (1) hot drum mixer shall not exceed 1,490,400 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The VOC emissions from the aggregate dryer shall not exceed 0.032 pounds per ton of asphalt processed.

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

Note: This VOC BACT avoidance limit was not included in prior permit approvals. This limit is being added with this Renewal.

This change is a Title I change.

(e) 326 IAC 8-5-2 (Miscellaneous operations: asphalt paving)
Any paving operation producing emulsified or cutback asphalt after January 1, 1980, is subject to the requirements of 326 IAC 8-5-2. Pursuant to this rule, no person shall cause or allow the use of cutback asphalt or asphalt emulsion containing more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:

(a) penetrating prime coating

(b) stockpile storage

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

The owner or operator is not subject to the requirements of this rule, since it does not produce emulsified or cutback asphalt

(f) There are no other 326 IAC 8 Rules (VOCs) that are applicable to the hot-mix batch/drum asphalt plant.

(g) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
Pursuant to 326 IAC 9-1-1(a), the hot drum mixer and the hot batch mixer are each not subject to the requirements of 326 IAC 9-1, since each was not one of the source types listed in 326 IAC 9-1-2.

(h) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
Pursuant to 326 IAC 10-3-1(a), the 80.2 MMBtu/hr dryer burner is not subject to the requirements of 326 IAC 10-3, since it does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a) and because it still has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu/hr).

(i) 326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))
Pursuant to 326 IAC 10-5-2(1), the 80.2 MMBtu/hr dryer burner is not subject to the requirements of 326 IAC 10-5, since it does not meet the definition of an affected facility, as defined in 326 IAC 10-5-2(1) and because it is an external combustion unit and not an internal combustion engine.

Material Handling

(a) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(c)(5), the scalp-off screening operation and conveying operation at this source are each not subject to the requirements of 326 IAC 6-3 since each is subject to the more stringent particulate limit established in 326 IAC 12. The scalp-off screening and conveying operations at this source are subject to 40 CFR 60, Subpart I (Standards of Performance for Hot Mix Asphalt Facilities), which incorporated by reference through 326 IAC 12.

Note: There is no crushing operation at this source.

Hot Oil Heaters

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The one (1) hot oil heater each rated at 2.10 MMBtu per hour combusting natural gas, is subject to 326 IAC 6-2-4 because the unit was constructed before the rule applicability date of September 21, 1983, and meets the definition of an indirect heating unit, as defined in 326 IAC 1-2-19, since each unit combusts fuel to produce usable heat that is to be transferred through a heat-conducting materials barrier or by a heat storage medium to a material to be heated so that the material being heated is not contacted by, and adds no substance to the products of combustion.

Pursuant to 326 IAC 6-2-3(a), for a total source maximum operating capacity rating of less than ten (10) MMBtu/hr, the pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input shall not exceed six tenths (0.8) pounds per MMBtu (lb/MMBtu).

Therefore, particulate emissions from each hot oil heater shall not exceed 0.8 pounds per MMBtu heat input.

Note: This requirement has been omitted from prior permit approvals and will be added with this Renewal. This change is a Title I change.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 1-2-59, the one (1) hot oil heater is exempt from the requirements of 326 IAC 6-3, because since liquid and gaseous fuels and combustion air are not considered as part of the process weight rate.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
Pursuant to 326 IAC 7-1.1, the one (1) hot oil heater is not subject to the requirements of 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations), since the potential to emit sulfur dioxide from each hot oil heater is less than twenty-five (25) tons per year and ten (10) pounds per hour.

(d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
Pursuant to 326 IAC 8-1-6, the one (1) hot oil heater is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from the hot oil heater is less than twenty-five (25) tons per year.

Storage Tanks

(a) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Pursuant to 326 IAC 8-1-6, the storage tank is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from the new storage tank is less than twenty-five (25) tons per year.

(b) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
Pursuant to 326 IAC 8-4-3(a), the storage tank is not subject to the requirements of 326 IAC 8-4-3, since it is not a petroleum liquid storage vessels with capacities greater than thirty-nine thousand (39,000) gallons.

(c) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
Pursuant to 326 IAC 8-9-1(a), the storage tank is not subject to the requirements of 326 IAC 8-9, since this source is not located in Clark, Floyd, Lake, or Porter County.

Combustion (Roof Top Furnace)

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
Pursuant to 6-2-1(a), the one (1) natural gas-fired rooftop furnace, is not subject to the requirements of 326 IAC 6-2-4, since it is not a source of indirect heating.

(b) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 6-3-1(a), the one (1) natural gas-fired rooftop furnace is not subject to the requirements of 326 IAC 6-3-2, since it is not a "manufacturing process" as defined by 326 IAC 6-3-1.5.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
Pursuant to 326 IAC 7-1.1-1, the one (1) natural gas-fired rooftop furnace is not subject to the requirements of 326 IAC 7-1.1, since it has potential emissions less than twenty-five (25) tone per year or ten (10) pounds per hour of sulfur dioxide

(d) 326 IAC 8-1-6 (New Facilities: General Reduction Requirements)
Pursuant to 326 IAC 8-1-6(1), the one (1) natural gas-fired rooftop furnace is not subject to the requirements of 326 IAC 8-1-6, since it has potential emissions less than twenty-five (25) tons of VOC per year.

(e) 326 IAC 10 (Nitrogen Oxides)
Pursuant to 326 IAC 10-3 and 326 IAC 10-4, one (1) natural gas-fired rooftop furnace at this source is not subject to the requirements of 326 IAC 10, because this unit is not located in Clark or Floyd Counties, is not in a source category, is not used for generating electricity and is not "large affected units".

Compliance Determination and Monitoring Requirements

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

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

(a) The compliance monitoring requirements applicable to this source are as follows:

(1) The baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.

Emission Unit/Control	Operating Parameters	Range	Frequency
Dryer/Mixer Baghouse (Stack #11)	Visible Emissions Notations	Normal-Abnormal	Once per day
	Pressure Drop	2.0 and 6.0 inches H_2O	Once per day

(b) The compliance testing requirements applicable to this source are as follows:

Emission Unit	Control Device	Pollutant	Timeframe for Testing	Frequency of Testing
Dryer/mixer	Baghouse	PM, PM10, PM2.5(1)	Not later than five (5) years from the most recent compliant stack test	Once every five (5) years

Notes:

(1) Testing requirements for PM and PM2.5 are being added with this renewal. The testing requirement for PM10 already exists. These testing requirements are necessary to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 40 CFR 60, Subpart I.

(2) The last valid compliant stack test for the hot drum mixer was conducted on August 2, 2011. Wayne Asphalt & Construction Co. Inc, was within the allowable PM10 emission rate during the stack test. However, this Renewal includes new emission limits by including an annual asphalt production limitation, PM and PM2.5 emission limits (lb/ton) and a revised PM10 emission limit (in lb/ton). Testing for PM and PM2.5 shall be conducted concurrently with the PM10 testing and testing shall be completed in accordance with the existing testing schedule (not later than five (5) years from the date of the most recent compliant stack test).

These testing requirements are necessary in order to determine compliance with the particulate emission limits.

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 July 19, 2013.

Conclusion

The operation of this operation of a stationary hot mix batch/drum asphalt manufacturing plant shall be subject to the conditions of the attached FESOP Renewal No. F003-33445-03212.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Nida Habeeb 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) 234-8531 or toll free at 1-800-451-6027 extension 4-8531.

(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 - Batch Mix

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Asphalt Plant Maximum Capacity - Batch Mix

Maximum Hourly Asphalt Production =	80	ton/hr					
Maximum Annual Asphalt Production =	700,800	ton/yr					
Maximum Annual Blast Furnace Slag Usage =	0	ton/yr	0	% sulfur			
Maximum Annual Steel Slag Usage =	0	ton/yr	0	% sulfur			
Maximum Dryer Fuel Input Rate =	80.2	MMBtu/hr					
Natural Gas Usage =	703	MMCF/yr					
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur			
No. 4 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur			
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur			
Propane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur			
Butane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur			
Used/Waste Oil Usage =	0	gal/yr, and	0.00	% sulfur	0.00 % ash	0.000 % chlorine,	0.000 % lead
Diesel Fuel Usage - Generator < 600 HP =	0	gal/yr,and					
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0.00	% sulfur			

Unlimited PM Dryer/Mixer Emission Factor =	32.0	lb/ton of asphalt production
Unlimited PM10 Dryer/Mixer Emission Factor =	4.5	lb/ton of asphalt production
Unlimited PM2.5 Dryer/Mixer Emission Factor =	0.27	lb/ton of asphalt production
Unlimited VOC Dryer/Mixer Emission Factor =	0.008	lb/ton of asphalt production
Unlimited CO Dryer/Mixer Emission Factor =	0.4	lb/ton of asphalt production
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed

Unlimited/Uncontrolled Emissions

	Unlimited/Uncontrolled Potential to Emit (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
Process Description	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**CO_2e**	**Total HAPs**	**Worst Case HAP**	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	0.67	2.67	2.67	0.21	35.13	1.93	29.51	42,462	0.66	0.63	(hexane)
Dryer/Mixer and Batch Tower (Process)	11,212.8	1,576.8	94.61	1.61	8.76	2.87	140.16	13,030	2.67	0.95	(xylene)
Dryer/Mixer Slag Processing (worst case)	0	0	0	0	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.92	0.05	0.77	1,840	0.017	0.017	(hexane)
Diesel-Fired Generator < 600 HP	0	0	0	0	0	0	0	0	0	0	
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions*	**11,212.8**	**1,576.9**	**94.68**	**1.62**	**36.05**	**2.92**	**140.93**	**44,302**	**2.69**	**0.95**	(xylene)
Fugitive Emissions											
Asphalt Load-Out, Silo Filling, On-Site Yard	0.39	0.39	0.39	0	0	6.00	1.01	0	0.10	0.03	(formaldehyde)
Material Storage Piles	0.43	0.15	0.15	0	0	0	0	0	0	0	
Material Processing and Handling	2.26	1.07	0.16	0	0	0	0	0	0	0	
Material Screening and Conveying	9.32	3.26	3.26	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	0.84	0.17	0.04	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	
Insignificant Combustion (natural gas-fired roof top furnace)	6.5E-04	2.6E-03	2.6E-03	2.1E-04	3.4E-02	1.9E-03	2.9E-02	41	6.5E-04	6.2E-04	(hexane)
Total Fugitive Emissions	**13.25**	**5.04**	**4.01**	**2.1E-04**	**0.03**	**6.00**	**1.04**	**41**	**0.10**	**0.03**	(formaldehyde)
Totals Unlimited/Uncontrolled PTE	**11,226.1**	**1,581.9**	**98.69**	**1.62**	**36.08**	**8.93**	**141.97**	**44,343**	**2.79**	**0.95**	(xylene)

negl = negligible
Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Worst Case Emissions From Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP
Fuel component percentages provided by the source.

Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Fuel Input Rate =	80	MMBtu/hr								
Natural Gas Usage =	703	MMCF/yr								
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur						
No. 4 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur						
Propane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur						
Butane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	0	gal/yr, and	0.00	% sulfur	0.00	% ash	0.000	% chlorine,	0.000	% lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)							Unlimited/Uncontrolled Potential to Emit (tons/yr)							
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	3.22	0.5	0.6	0.0	0.67	0.00	0.00	0.00	0.000	0.000	0.00	**0.67**
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	0	2.67	0.00	0.00	0.00	0.000	0.000	0.00	**2.67**
SO2	0.6	0.0	0.0	0.0	0.000	0.000	0.0	0.21	0.00	0.00	0.00	0.000	0.000	0.00	**0.21**
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	35.13	0.00	0.00	0.00	0.00	0.00	0.00	**35.13**
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	1.93	0.00	0.00	0.00	0.00	0.00	0.00	**1.93**
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	29.507184	0.00	0.00	0.00	0.00	0.00	0.00	**29.51**
Hazardous Air Pollutant															
HCl							0.0							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	7.0E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**7.0E-05**
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	4.2E-06	0.00E+00	0.00E+00	0.00E+00			negl	**4.2E-06**
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	3.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**3.9E-04**
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	4.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**4.9E-04**
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.0E-05		0.00E+00	0.00E+00			0.00E+00	**3.0E-05**
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0	1.8E-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	1.3E-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				9.1E-05	0.00E+00	0.00E+00	0.00E+00				**9.1E-05**
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	7.4E-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	8.4E-06	0.00E+00	0.00E+00	0.00E+00			negl	**8.4E-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				7.4E-04		0.00E+00	0.00E+00				**7.4E-04**
Bis(2-ethylhexyl)phthalate							2.2E-03							0.00E+00	**0.0E+00**
Dichlorobenzene	1.2E-03						8.0E-07	4.2E-04						0.00E+00	**4.2E-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				2.6E-02	0.00E+00	0.00E+00	0.00E+00				**0.026**
Hexane	1.8E+00							0.63							**0.632**
Phenol							2.4E-03							0.00E+00	**0.0E+00**
Toluene	3.4E-03		6.20E-03	6.20E-03				1.2E-03		0.00E+00	0.00E+00				**1.2E-03**
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		0.00E+00	0.00E+00			0.00E+00	**0.0E+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				**0.0E+00**
							Total HAPs	**0.66**	**0.00**	**0.00**	**0.00**	**0**	**0**	**0.00**	**0.66**

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]
Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]
Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
Sources of AP-42 Emission Factors for fuel combustion:
Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2, No.4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

Abbreviations

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

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

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Fuel Input Rate =	80	MMBtu/hr						
Natural Gas Usage =	703	MMCF/yr						
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur				
No. 4 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur				
Propane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur				
Butane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur				
Used/Waste Oil Usage =	0	gal/yr, and	0.00	% sulfur	0.00	% ash	0.000 % chlorine,	0.000 % lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)						
CO2e Fraction	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)
CO2	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15
CH4	2.49	0.91	0.97	1.00	0.60	0.67	0.89
N2O	2.2	0.26	0.19	0.53	0.9	0.9	0.18

Global Warming Potentials (GWP)		
Name	Chemical Formula	Global warming potential
Carbon dioxide	CO_2	1
Methane	CH_4	25
Nitrous oxide	N_2O	298

	Unlimited/Uncontrolled Potential to Emit (tons/yr)						
CO2e Fraction	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)
CO2	42,209.97	0.00	0.00	0.00	0.00	0.00	0.00
CH4	0.88	0.00	0.00	0.00	0.00	0.00	0.00
N2O	0.77	0.00	0.00	0.00	0.00	0.00	0.00
Total	42,211.62	0.00	0.00	0.00	0.00	0.00	0.00
CO2e Equivalent Emissions (tons/yr)	42,462.17	0.00	0.00	0.00	0.00	0.00	0.00

CO2e for Worst Case Fuel* (tons/yr)
42,462.17

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]
Global 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, No. 4, and Residual (No. 5 or No. 6) Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), 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 (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).

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

Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer and Batch Tower - Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing and the batch tower.

Maximum Hourly Asphalt Production = 80 ton/hr
Maximum Annual Asphalt Production = 700,800 ton/yr

	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Batch-Mix Plant (dryer, hot screens, and mixer)			Batch-Mix Plant (dryer, hot screens, and mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	**Worse Case PTE**
PM*	32	32	32	11212.8			**11212.8**
PM10*	4.5	4.5	4.5	1576.8			**1576.8**
PM2.5*	0.27	0.27	0.27	94.608			**94.6**
SO2**	0.0046	0.088	0.088	1.6			**1.6**
NOx**	0.025	0.12	0.12	8.8			**8.8**
VOC**	0.0082	0.0082	0.036	2.9			**2.9**
CO***	0.4	0.4	0.4	140.2			**140.2**
Hazardous Air Pollutant							
Arsenic	4.60E-07	4.60E-07	4.60E-07	1.61E-04			**1.61E-04**
Beryllium	1.50E-07	1.50E-07	1.50E-07	5.26E-05			**5.26E-05**
Cadmium	6.10E-07	6.10E-07	6.10E-07	2.14E-04			**2.14E-04**
Chromium	5.70E-07	5.70E-07	5.70E-07	2.00E-04			**2.00E-04**
Lead	8.90E-07	8.90E-07	1.00E-05	3.12E-04			**3.12E-04**
Manganese	6.90E-06	6.90E-06	6.90E-06	2.42E-03			**2.42E-03**
Mercury	4.10E-07	4.10E-07	4.10E-07	1.44E-04			**1.44E-04**
Nickel	3.00E-06	3.00E-06	3.00E-06	1.05E-03			**1.05E-03**
Selenium	4.90E-07	4.90E-07	4.90E-07	1.72E-04			**1.72E-04**
Acetaldehyde	3.20E-04	3.20E-04	3.20E-04	0.11			**0.11**
Benzene	2.80E-04	2.80E-04	2.80E-04	0.10			**0.10**
Ethylbenzene	2.20E-03	2.20E-03	2.20E-03	0.77			**0.77**
Formaldehyde	7.40E-04	7.40E-04	7.40E-04	0.26			**0.26**
Quinone	2.70E-04	2.70E-04	2.70E-04	0.09			**0.09**
Toluene	1.00E-03	1.00E-03	1.00E-03	0.35			**0.35**
Total PAH Haps	1.10E-04	1.10E-04	2.30E-04	0.04			**0.04**
Xylene	2.70E-03	2.70E-03	2.70E-03	0.95			**0.95**
						Total HAPs	**2.67**
						Worst Single HAP	**0.95** **(xylene)**

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 11.1-1, 11.1-2, 11.1-5, 11.1-6, 11.1-19, and 11.1-11
Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

** SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

*** CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

Abbreviations

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

Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO2e) Emissions from the
Batch-Mix Plant (Dryer/Mixer) Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Maximum Hourly Asphalt Production =	80	ton/hr
Maximum Annual Asphalt Production =	700,800	ton/yr

	Emission Factor (lb/ton) Batch-Mix Plant (dryer/mixer)				Unlimited/Uncontrolled Potential to Emit (tons/yr) Batch-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Global Warming Potentials (GWP)	Natural Gas	No. 2 Fuel Oil	Waste Oil	**CO2e for Worst Case Fuel (tons/yr)**
CO2	37	37	37	1	12,964.80	12,964.80	12,964.80	
CH4	0.0074	0.0074	0.0074	25	2.59	2.59	2.59	
N2O				298	0	0	0	
				Total	12,967.39	12,967.39	12,967.39	**13,029.62**
				CO2e Equivalent Emissions (tons/yr)	13,029.62	13,029.62	13,029.62	

Methodology

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N20 available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).

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: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Maximum Annual Blast Furnace Slag Usage =	0	ton/yr	0	% sulfur
Maximum Annual Steel Slag Usage =	0	ton/yr	0	% sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.74	0.0
Steel Slag**	0.0014	0.0

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

* Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

** Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Unlimited Potential to Emit SO2 from Slag (tons/yr) = [(Maximum Annual Slag Usage (ton/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations
SO2 = Sulfur Dioxide

Appendix A.1: Unlimited Emissions Calculations
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Maximum Hot Oil Heater Fuel Input Rate =	2.10	MMBtu/hr		
Natural Gas Usage =	18	MMCF/yr		
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur

Unlimited/Uncontrolled Emissions

	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
	Hot Oil Heater		Hot Oil Heater		
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	0.017	0.000	**0.02**
PM10/PM2.5	7.6	3.3	0.070	0.000	**0.07**
SO2	0.6	71.0	0.006	0.000	**0.01**
NOx	100	20.0	0.920	0.000	**0.92**
VOC	5.5	0.20	0.051	0.000	**0.05**
CO	84	5.0	0.773	0.000	**0.77**
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	1.8E-06	0.00E+00	**1.8E-06**
Beryllium	1.2E-05	4.2E-04	1.1E-07	0.00E+00	**1.1E-07**
Cadmium	1.1E-03	4.2E-04	1.0E-05	0.00E+00	**1.0E-05**
Chromium	1.4E-03	4.2E-04	1.3E-05	0.00E+00	**1.3E-05**
Cobalt	8.4E-05		7.7E-07		**7.7E-07**
Lead	5.0E-04	1.3E-03	4.6E-06	0.00E+00	**4.6E-06**
Manganese	3.8E-04	8.4E-04	3.5E-06	0.00E+00	**3.5E-06**
Mercury	2.6E-04	4.2E-04	2.4E-06	0.00E+00	**2.4E-06**
Nickel	2.1E-03	4.2E-04	1.9E-05	0.00E+00	**1.9E-05**
Selenium	2.4E-05	2.1E-03	2.2E-07	0.00E+00	**2.2E-07**
Benzene	2.1E-03		1.9E-05		**1.9E-05**
Dichlorobenzene	1.2E-03		1.1E-05		**1.1E-05**
Ethylbenzene					**0.0E+00**
Formaldehyde	7.5E-02	6.10E-02	6.9E-04	0.00E+00	**6.9E-04**
Hexane	1.8E+00		0.02		**1.7E-02**
Phenol					**0.0E+00**
Toluene	3.4E-03		3.1E-05		**3.1E-05**
Total PAH Haps	negl		negl		**0.0E+00**
Polycyclic Organic Matter		3.30E-03		0.00E+00	**0.0E+00**
		Total HAPs =	**1.7E-02**	**0.0E+00**	**0.017**
		Worst Single HAP =	**1.7E-02 (Hexane)**	**0.0E+00 (Formaldehyde)**	**1.7E-02 (Hexane)**

Methodology
Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
Sources of AP-42 Emission Factors for fuel combustion:
Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

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

Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO2e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Maximum Hot Oil Heater Fuel Input Rate =	2.10	MMBtu/hr		
Natural Gas Usage =	18.40	MMCF/yr		
No. 2 Fuel Oil Usage =	0.00	gal/yr,	0.00	% sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units) Natural Gas (lb/MMCF)	Emission Factor (units) No. 2 Fuel Oil (lb/kgal)	Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr)	Unlimited/Uncontrolled Potential to Emit (tons/yr) No. 2 Fuel Oil (tons/yr)
CO2	120,161.84	22,501.41	1	1,105.25	0.00
CH4	2.49	0.91	25	0.02	0.00
N2O	2.2	0.26	298	0.02	0.00
				1,105.29	0.00
CO2e Equivalent Emissions (tons/yr)				1,111.85	0.00

Worse Case CO2e Emissions (tons/yr)
1,111.85

Methodology
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), 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 5/10), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [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 (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).

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

Appendix A.1: Unlimited Emissions Calculations
Hot Oil Heating System - Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater =	2.10	MMBtu/hr
Natural Gas Usage =	18.40	MMCF/yr, and
No. 2 Fuel Oil Usage =	0.00	gal/yr

	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Criteria Pollutant	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	**Worse Case PTE**
VOC	2.60E-08	2.65E-05	2.39E-04	0.000	**0.000**
CO	8.90E-06	0.0012	0.082	0.000	**0.082**
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1839.60	0.00	**1839.60**
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.39E-04	0.00E+00	**2.39E-04**
Acenaphthene		5.30E-07		0.00E+00	**0.00E+00**
Acenaphthylene		2.00E-07		0.00E+00	**0.00E+00**
Anthracene		1.80E-07		0.00E+00	**0.00E+00**
Benzo(b)fluoranthene		1.00E-07		0.00E+00	**0.00E+00**
Fluoranthene		4.40E-08		0.00E+00	**0.00E+00**
Fluorene		3.20E-08		0.00E+00	**0.00E+00**
Naphthalene		1.70E-05		0.00E+00	**0.00E+00**
Phenanthrene		4.90E-06		0.00E+00	**0.00E+00**
Pyrene		3.20E-08		0.00E+00	**0.00E+00**
				Total HAPs	**2.39E-04**
				Worst Single HAP	**2.39E-04** **(Formaldehyde)**

Methodology
Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)
No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

*Note: There are no emission factors for CH4 and N20 available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations
CO = Carbon Monoxide VOC = Volatile Organic Compound CO2 = Carbon Dioxide

Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

	Pollutant						
	PM[2]	PM10[2]	direct PM2.5[2]	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal[1]	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1] The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[1]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[2]PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal[4]	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

[3]PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

[4]The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	**0.00E+00**
Potential Emission of Worst Case HAPs (tons/yr)	**0.00E+00**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2[5]	CH4[6]	N2O[6]
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Potential Emission in tons/yr	0.00	0.000	0.000

[5]The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[5]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[6]The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[6]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	**0.00**
CO2e Total in tons/yr	**0.00**

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = 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).

Appendix A.1: Unlimited Emissions Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

Sulfur Content (S) of Fuel (% by weight): 0.50

	Pollutant						
	PM	PM10[2]	direct PM2.5[2]	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			4.05E-03 *(.00809S)*	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal[1]	13.70	7.85	7.85	79.18	469.82	13.80	107.67
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[1]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[2]Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[2]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal[4]	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

[3]PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

[4]Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	**0.00E+00**
Potential Emission of Worst Case HAPs (tons/yr)	**0.00E+00**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2[5]	CH4[5,6]	N2O[7]
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Potential Emission in tons/yr	0.00	0.00	0.00

[5] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[5]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[6]According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.

[7]The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[7]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	**0.00**
CO2e Total in tons/yr	**0.00**

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = 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).

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

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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 =	700,800	tons/yr

	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
Pollutant	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Total**
Total PM*	5.2E-04	5.9E-04	NA	0.18	0.21	NA	**0.39**
Organic PM	3.4E-04	2.5E-04	NA	0.12	0.089	NA	**0.21**
TOC	0.004	0.012	0.001	1.46	4.27	0.385	**6.1**
CO	0.001	0.001	3.5E-04	0.47	0.413	0.123	**1.01**

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

PM/HAPs	**0.008**	**0.010**	**0**	**0.019**
VOC/HAPs	**0.022**	**0.054**	**0.006**	**0.082**
non-VOC/HAPs	**1.1E-04**	**1.2E-05**	**3.0E-05**	**1.5E-04**
non-VOC/non-HAPs	**0.11**	**0.06**	**0.03**	**0.19**

Total VOCs	**1.37**	**4.27**	**0.4**	**6.0**
Total HAPs	**0.03**	**0.06**	**0.006**	**0.10**
			Worst Single HAP	**0.031 (formaldehyde)**

Methodology
The asphalt temperature and volatility factor were provided by the source.
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: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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%	3.1E-04	4.2E-04	NA	7.3E-04
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	3.3E-05	1.2E-05	NA	4.6E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	8.4E-05	1.2E-04	NA	2.0E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	2.3E-05	5.0E-05	NA	7.3E-05
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	9.1E-06	0	NA	9.1E-06
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	2.6E-06	0	NA	2.6E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	2.3E-06	0	NA	2.3E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	2.7E-06	0	NA	2.7E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	9.3E-06	8.5E-06	NA	1.8E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	1.2E-04	1.9E-04	NA	3.1E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	4.4E-07	0	NA	4.4E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	6.0E-05		NA	6.0E-05
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	9.2E-04	9.0E-04	NA	1.8E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	5.6E-07	0	NA	5.6E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	2.8E-03	4.7E-03	NA	0.008
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	1.5E-03	1.6E-03	NA	3.1E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	2.6E-05	2.7E-05	NA	5.3E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	9.7E-04	1.6E-03	NA	2.6E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	1.8E-04	3.9E-04	NA	5.7E-04
Total PAH HAPs							**0.007**	**0.010**	**NA**	**0.017**
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	1.4E-03	0	0	1.4E-03

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

Methodology
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%	**1.37**	**4.27**	**0.36**	**6.00**
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	9.5E-02	1.1E-02	2.5E-02	0.131
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	6.7E-04	2.3E-03	1.8E-04	0.003
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	1.0E-02	4.7E-02	2.7E-03	0.060
Total non-VOC/non-HAPS					7.30%	1.40%	**0.106**	**0.060**	**0.028**	**0.19**
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	7.6E-04	1.4E-03	2.0E-04	2.3E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	1.4E-04	2.1E-04	3.7E-05	3.9E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	7.1E-04	1.7E-03	1.9E-04	2.6E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	1.9E-04	6.8E-04	5.0E-05	9.2E-04
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	3.1E-06	1.7E-04	8.1E-07	1.7E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	2.2E-04	9.8E-04	5.8E-05	1.3E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	1.6E-03	0	4.2E-04	2.0E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	4.1E-03	1.6E-03	1.1E-03	0.007
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	1.3E-03	2.9E-02	3.4E-04	0.031
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	2.2E-03	4.3E-03	5.8E-04	0.007
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	2.6E-05	1.3E-05	6.9E-06	4.6E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	1.2E-05	0	1.2E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	1.1E-04	2.3E-04	2.8E-05	3.7E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	1.1E-04	0	3.0E-05	1.4E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	3.1E-03	2.6E-03	8.1E-04	0.007
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	1.9E-05	0	5.0E-06	2.4E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	6.0E-03	8.5E-03	1.6E-03	0.016
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	1.2E-03	2.4E-03	3.1E-04	3.9E-03
Total volatile organic HAPs					1.50%	1.30%	**0.022**	**0.056**	**0.006**	**0.083**

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: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.50	0.275	0.096
Limestone	1.6	1.85	0.00	0.000	0.000
RAP	0.5	0.58	1.50	0.158	0.055
Gravel	1.6	1.85	0.00	0.000	0.000
Shingles	0.5	0.58	0.00	0.000	0.000
Slag	3.8	4.40	0.00	0.000	0.000
			Totals	**0.43**	**0.15**

Methodology
PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)
PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%
*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)
**Maximum anticipated pile size (acres) provided by the source.
PM2.5 = PM10
Abbreviations
RAP - recycled asphalt pavement
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

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

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Ef = k*(0.0032)*[(U/5)^1.3 / (M/2)^1.4]
where: Ef = Emission factor (lb/ton)

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

Maximum Annual Asphalt Production =	700,800	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	665,760	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	0.75	0.36	0.05
Front-end loader dumping of materials into feeder bins	0.75	0.36	0.05
Conveyor dropping material into dryer/mixer or batch tower	0.75	0.36	0.05
Total (tons/yr)	**2.26**	**1.07**	**0.16**

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

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing***	0.0054	0.0024	0.00	0.00
Screening	0.025	0.0087	8.32	2.90
Conveying	0.003	0.0011	1.00	0.37
Unlimited Potential to Emit (tons/yr) =			**9.32**	**3.26**

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
*** The source has no crushing operations

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: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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 =	700,800	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	665,760	tons/yr
Maximum Asphalt Cement/Binder Throughput =	35,040	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)	0.0	0.0	0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
	Total				**0.0E+00**	**0.0E+00**			**0.0E+00**

Average Vehicle Weight Per Trip =	0.0	tons/trip
Average Miles Per Trip =	0.000	miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	0.0	0.0	0.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365]
Mitigated Emission Factor, Eext = E * [(365 - P)/365]

where P =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.00	0.00	0.00	lb/mile
Mitigated Emission Factor, Eext =	0.00	0.00	0.00	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Cement/Binder 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
Asphalt Cement/Binder 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
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)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Methodology
Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.1: Unlimited Emissions Calculations
Paved Roads

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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 =	700,800	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	665,760	tons/yr
Maximum Asphalt Cement/Binder Throughput =	35,040	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	3.0E+04	1.2E+06	300	0.057	1688.7
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	3.0E+04	5.1E+05	300	0.057	1688.7
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	9.7E+02	4.7E+04	300	0.057	55.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	9.7E+02	1.2E+04	300	0.057	55.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	0.0E+00	0.0E+00	300	0.057	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	0.0E+00	0.0E+00	300	0.057	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	1.6E+05	3.0E+06	300	0.057	9006.5
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	1.6E+05	2.4E+06	300	0.057	9006.5
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	2.9E+04	1.2E+06	300	0.057	1659.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	2.9E+04	5.0E+05	300	0.057	1659.1
	Total				**4.4E+05**	**8.8E+06**			**2.5E+04**

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m^2 = Ubitiguous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)]
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.13	0.03	0.01	0.11	0.02	0.01	0.06	0.01	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.13	0.03	0.01	0.11	0.02	0.01	0.06	0.01	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.004	0.001	2.0E-04	0.004	0.001	1.8E-04	0.002	3.8E-04	9.2E-05
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.004	0.001	2.0E-04	0.004	0.001	1.8E-04	0.002	3.8E-04	9.2E-05
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)	0.67	0.13	0.03	0.61	0.12	0.03	0.31	0.06	0.02
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.67	0.13	0.03	0.61	0.12	0.03	0.31	0.06	0.02
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.12	0.02	0.01	0.11	0.02	0.01	0.06	0.01	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.12	0.02	0.01	0.11	0.02	0.01	0.06	0.01	0.00
	Totals	**1.85**	**0.37**	**0.09**	**1.69**	**0.34**	**0.08**	**0.84**	**0.17**	**0.04**

Methodology
Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

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

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Source Address: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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 =	700,800	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
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*

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

Methodology
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] * [Maximum Weight % of VOC Solvent in Binder]
PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [Maximum VOC Solvent Usage (tons/yr)]
PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

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

Company Name: Wayne Asphalt & Construction Co., Inc.
Source Address: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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

Gasoline Throughput =	0	gallons/day
=	0.0	kgal/yr

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
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.

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

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

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
0.080	1020	0.7

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	6.5E-04	2.6E-03	2.6E-03	2.1E-04	3.4E-02	1.9E-03	2.9E-02

*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

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	7.2E-07	4.1E-07	2.6E-05	6.2E-04	1.2E-06	**6.5E-04**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.7E-07	3.8E-07	4.8E-07	1.3E-07	7.2E-07	**1.9E-06**
					Total HAPs	**6.5E-04**
					Worst HAP	**6.2E-04**

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

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	41	0.001	0.001
Summed Potential Emissions in tons/yr	41		
CO2e Total in tons/yr	41		

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) = 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).

updated 2/13

Appendix A.2: Unlimited Emissions Calculations
Entire Source - Drum Mix

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Asphalt Plant Maximum Capacity

Maximum Hourly Asphalt Production =	190	ton/hr						
Maximum Annual Asphalt Production =	1,664,400	ton/yr						
Maximum Annual Blast Furnace Slag Usage =	0	ton/yr	0	% sulfur				
Maximum Annual Steel Slag Usage =	0	ton/yr	0	% sulfur				
Maximum Dryer Fuel Input Rate =	80.2	MMBtu/hr						
Natural Gas Usage =	703	MMCF/yr						
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur				
No. 4 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur				
Propane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur				
Butane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur				
Used/Waste Oil Usage =	0	gal/yr, and	0.00	% sulfur	0.00	% ash	0.000	% chlorine, 0.000 % lead
Diesel Fuel Usage - Generator < 600 HP =	0	gal/yr,and						
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0.00	% sulfur				

Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed

Unlimited/Uncontrolled Emissions

	Unlimited/Uncontrolled Potential to Emit (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
Process Description	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**CO_2e**	**Total HAPs**	**Worst Case HAP**	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	0.67	2.67	2.67	0.21	35.13	1.93	29.51	42,462	0.66	0.63	(hexane)
Dryer/Mixer (Process)	23,301.6	5,409.3	1,248.3	2.83	21.64	26.63	108.19	27,712	4.46	2.58	(formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	0.00	0	0	0	0.00	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.92	0.05	0.77	1,840	0.017	0.017	(hexane)
Diesel-Fired Generator < 600 HP	0	0	0	0	0	0	0	0	0	0	
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions*	**23,301.6**	**5,409.4**	**1,248.4**	**2.83**	**36.05**	**26.68**	**108.96**	**44,302**	**4.48**	**2.58**	(formaldehyde)
Fugitive Emissions											
Asphalt Load-Out and On-Site Yard	0.43	0.43	0.43	0	0	4.11	1.42	0	0.09	0.018	(xylene)
Material Storage Piles	0.43	0.15	0.15	0	0	0	0	0	0	0	
Material Processing and Handling	5.38	2.54	0.39	0	0	0	0	0	0	0	
Material Screening and Conveying	22.14	7.75	7.75	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	2.00	0.40	0.10	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	0	
Insignificant Combustion (natural gas-fired roof top furnace)	6.5E-04	2.6E-03	2.6E-03	2.1E-04	3.4E-02	1.9E-03	2.9E-02	41.47	6.5E-04	6.2E-04	(hexane)
Total Fugitive Emissions	**30.38**	**11.28**	**8.82**	**2.1E-04**	**0.03**	**4.12**	**1.44**	**41.47**	**0.09**	**0.018**	(xylene)
Totals Unlimited/Uncontrolled PTE	**23,332.0**	**5,420.7**	**1,257.2**	**2.84**	**36.08**	**30.80**	**110.40**	**44,343**	**4.56**	**2.58**	(formaldehyde)

negl = negligible
Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.
*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Worst Case Emissions From Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP
Fuel component percentages provided by the source.

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

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Fuel Input Rate =	80	MMBtu/hr								
Natural Gas Usage =	703	MMCF/yr								
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur						
No. 4 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur						
Propane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur						
Butane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	0	gal/yr, and	0.00	% sulfur	0.00	% ash	0.000	% chlorine,	0.000	% lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)							Unlimited/Uncontrolled Potential to Emit (tons/yr)							
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	3.22	0.5	0.6	0.0	0.67	0.00	0.00	0.00	0.000	0.000	0.00	**0.67**
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	0	2.67	0.00	0.00	0.00	0.000	0.000	0.00	**2.67**
SO2	0.6	0.0	0.0	0.0	0.000	0.000	0.0	0.21	0.00	0.00	0.00	0.000	0.000	0.00	**0.21**
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	35.13	0.00	0.00	0.00	0.00	0.00	0.00	**35.13**
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	1.93	0.00	0.00	0.00	0.00	0.00	0.00	**1.93**
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	29.507184	0.00	0.00	0.00	0.00	0.00	0.00	**29.51**
Hazardous Air Pollutant															
HCl							0.0							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	7.0E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**7.0E-05**
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	4.2E-06	0.00E+00	0.00E+00	0.00E+00			negl	**4.2E-06**
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	3.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**3.9E-04**
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	4.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**4.9E-04**
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.0E-05		0.00E+00	0.00E+00			0.00E+00	**3.0E-05**
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0	1.8E-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	1.3E-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				9.1E-05	0.00E+00	0.00E+00	0.00E+00				**9.1E-05**
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	7.4E-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	8.4E-06	0.00E+00	0.00E+00	0.00E+00			negl	**8.4E-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				7.4E-04		0.00E+00	0.00E+00				**7.4E-04**
Bis(2-ethylhexyl)phthalate							2.2E-03							0.00E+00	**0.0E+00**
Dichlorobenzene	1.2E-03						8.0E-07	4.2E-04						0.00E+00	**4.2E-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				2.6E-02	0.00E+00	0.00E+00	0.00E+00				**0.026**
Hexane	1.8E+00							0.63							**0.632**
Phenol							2.4E-03							0.00E+00	**0.0E+00**
Toluene	3.4E-03		6.20E-03	6.20E-03				1.2E-03		0.00E+00	0.00E+00				**1.2E-03**
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		0.00E+00	0.00E+00			0.00E+00	**0.0E+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				**0.0E+00**
							Total HAPs	**0.66**	**0.00**	**0.00**	**0.00**	**0**	**0**	**0.00**	**0.66**

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]
Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]
Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
Sources of AP-42 Emission Factors for fuel combustion:
Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2, No.4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

Abbreviations

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

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

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Fuel Input Rate =	80	MMBtu/hr							
Natural Gas Usage =	703	MMCF/yr							
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur					
No. 4 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur					
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur					
Propane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur					
Butane Usage =	0	gal/yr, and	0.00	gr/100 ft3 sulfur					
Used/Waste Oil Usage =	0	gal/yr, and	0.00	% sulfur	0.00	% ash	0.000	% chlorine,	0.000 % lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)						
CO2e Fraction	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)
CO2	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15
CH4	2.49	0.91	0.97	1.00	0.60	0.67	0.89
N2O	2.2	0.26	0.19	0.53	0.9	0.9	0.18

Global Warming Potentials (GWP)		
Name	Chemical Formula	Global warming potential
Carbon dioxide	CO_2	1
Methane	CH_4	25
Nitrous oxide	N_2O	298

	Unlimited/Uncontrolled Potential to Emit (tons/yr)						
CO2e Fraction	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)
CO2	42,209.97	0.00	0.00	0.00	0.00	0.00	0.00
CH4	0.88	0.00	0.00	0.00	0.00	0.00	0.00
N2O	0.77	0.00	0.00	0.00	0.00	0.00	0.00
Total	42,211.62	0.00	0.00	0.00	0.00	0.00	0.00
CO2e Equivalent Emissions (tons/yr)	42,462.17	0.00	0.00	0.00	0.00	0.00	0.00

CO2e for Worst Case Fuel* (tons/yr)
42,462.17

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]
Global 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, No. 4, and Residual (No. 5 or No. 6) Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), 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 (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).

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

Appendix A.2: Unlimited Emissions Calculations
Dryer/Mixer - Process Emissions

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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

Maximum Hourly Asphalt Production = 190 ton/hr
Maximum Annual Asphalt Production = 1,664,400 ton/yr

	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	**Worse Case PTE**
PM*	28	28	28	23,301.6			**23,301.6**
PM10*	6.5	6.5	6.5	5,409.3			**5,409.3**
PM2.5*	1.5	1.5	1.5	1,248.3			**1,248.3**
SO2**	0.0034	0.011	0.058	2.8			**2.8**
NOx**	0.026	0.055	0.055	21.6			**21.6**
VOC**	0.032	0.032	0.032	26.6			**26.6**
CO***	0.13	0.13	0.13	108.2			**108.2**
Hazardous Air Pollutant							
HCl			2.10E-04				**0.00**
Antimony	1.80E-07	1.80E-07	1.80E-07	1.50E-04			**1.50E-04**
Arsenic	5.60E-07	5.60E-07	5.60E-07	4.66E-04			**4.66E-04**
Beryllium	negl	negl	negl	negl			**0.00E+00**
Cadmium	4.10E-07	4.10E-07	4.10E-07	3.41E-04			**3.41E-04**
Chromium	5.50E-06	5.50E-06	5.50E-06	4.58E-03			**4.58E-03**
Cobalt	2.60E-08	2.60E-08	2.60E-08	2.16E-05			**2.16E-05**
Lead	6.20E-07	1.50E-05	1.50E-05	5.16E-04			**5.16E-04**
Manganese	7.70E-06	7.70E-06	7.70E-06	6.41E-03			**6.41E-03**
Mercury	2.40E-07	2.60E-06	2.60E-06	2.00E-04			**2.00E-04**
Nickel	6.30E-05	6.30E-05	6.30E-05	0.05			**0.05**
Selenium	3.50E-07	3.50E-07	3.50E-07	2.91E-04			**2.91E-04**
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.03			**0.03**
Acetaldehyde			1.30E-03				**0.00**
Acrolein			2.60E-05				**0.00E+00**
Benzene	3.90E-04	3.90E-04	3.90E-04	0.32			**0.32**
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.20			**0.20**
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	2.58			**2.58**
Hexane	9.20E-04	9.20E-04	9.20E-04	0.77			**0.77**
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.04			**0.04**
MEK			2.00E-05				**0.00**
Propionaldehyde			1.30E-04				**0.00**
Quinone			1.60E-04				**0.00**
Toluene	1.50E-04	2.90E-03	2.90E-03	0.12			**0.12**
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.16			**0.16**
Xylene	2.00E-04	2.00E-04	2.00E-04	0.17			**0.17**
						Total HAPs	**4.46**
Methodology						**Worst Single HAP**	**2.58** **(formaldehyde)**

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12
Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

** SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

*** CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

Abbreviations

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

Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO2e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Maximum Hourly Asphalt Production =	190	ton/hr
Maximum Annual Asphalt Production =	1,664,400	ton/yr

	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)				Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Global Warming Potentials (GWP)	Natural Gas	No. 2 Fuel Oil	Waste Oil	**CO2e for Worst Case Fuel (tons/yr)**
CO2	33	33	33	1	27,462.60	27,462.60	27,462.60	
CH4	0.0120	0.0120	0.0120	25	9.99	9.99	9.99	
N2O				298	0	0	0	
				Total	27,472.59	27,472.59	27,472.59	**27,712.26**
				CO2e Equivalent Emissions (tons/yr)	27,712.26	27,712.26	27,712.26	

Methodology
Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N20 available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).

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

Appendix A.2: Unlimited Emissions Calculations
Dryer/Mixer Slag Processing

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Maximum Annual Blast Furnace Slag Usage =	0	ton/yr	0	% sulfur
Maximum Annual Steel Slag Usage =	0	ton/yr	0	% sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.74	0.0
Steel Slag**	0.0014	0.0

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

** Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

** Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Unlimited Potential to Emit SO2 from Slag (tons/yr) = [(Maximum Annual Slag Usage (ton/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations
SO2 = Sulfur Dioxide

Appendix A.2: Unlimited Emissions Calculations
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Maximum Hot Oil Heater Fuel Input Rate =	2.10	MMBtu/hr		
Natural Gas Usage =	18	MMCF/yr		
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur

Unlimited/Uncontrolled Emissions

	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
	Hot Oil Heater		Hot Oil Heater		
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	0.017	0.000	**0.02**
PM10/PM2.5	7.6	3.3	0.070	0.000	**0.07**
SO2	0.6	71.0	0.006	0.000	**0.01**
NOx	100	20.0	0.920	0.000	**0.92**
VOC	5.5	0.20	0.051	0.000	**0.05**
CO	84	5.0	0.773	0.000	**0.77**
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	1.8E-06	0.00E+00	**1.8E-06**
Beryllium	1.2E-05	4.2E-04	1.1E-07	0.00E+00	**1.1E-07**
Cadmium	1.1E-03	4.2E-04	1.0E-05	0.00E+00	**1.0E-05**
Chromium	1.4E-03	4.2E-04	1.3E-05	0.00E+00	**1.3E-05**
Cobalt	8.4E-05		7.7E-07		**7.7E-07**
Lead	5.0E-04	1.3E-03	4.6E-06	0.00E+00	**4.6E-06**
Manganese	3.8E-04	8.4E-04	3.5E-06	0.00E+00	**3.5E-06**
Mercury	2.6E-04	4.2E-04	2.4E-06	0.00E+00	**2.4E-06**
Nickel	2.1E-03	4.2E-04	1.9E-05	0.00E+00	**1.9E-05**
Selenium	2.4E-05	2.1E-03	2.2E-07	0.00E+00	**2.2E-07**
Benzene	2.1E-03		1.9E-05		**1.9E-05**
Dichlorobenzene	1.2E-03		1.1E-05		**1.1E-05**
Ethylbenzene					**0.0E+00**
Formaldehyde	7.5E-02	6.10E-02	6.9E-04	0.00E+00	**6.9E-04**
Hexane	1.8E+00		0.02		**1.7E-02**
Phenol					**0.0E+00**
Toluene	3.4E-03		3.1E-05		**3.1E-05**
Total PAH Haps	negl		negl		**0.0E+00**
Polycyclic Organic Matter		3.30E-03		0.00E+00	**0.0E+00**
		Total HAPs =	**1.7E-02**	**0.0E+00**	**0.017**
		Worst Single HAP =	**1.7E-02 (Hexane)**	**0.0E+00 (Formaldehyde)**	**1.7E-02 (Hexane)**

Methodology
Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
Sources of AP-42 Emission Factors for fuel combustion:
Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

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

Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO2e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Maximum Hot Oil Heater Fuel Input Rate =	2.10	MMBtu/hr		
Natural Gas Usage =	18.40	MMCF/yr		
No. 2 Fuel Oil Usage =	0.00	gal/yr,	0.00	% sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units) Natural Gas (lb/MMCF)	Emission Factor (units) No. 2 Fuel Oil (lb/kgal)	Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr)	Unlimited/Uncontrolled Potential to Emit (tons/yr) No. 2 Fuel Oil (tons/yr)
CO2	120,161.84	22,501.41	1	1,105.25	0.00
CH4	2.49	0.91	25	0.02	0.00
N2O	2.2	0.26	298	0.02	0.00
				1,105.29	0.00
CO2e Equivalent Emissions (tons/yr)				1,111.85	0.00

Worse Case CO2e Emissions (tons/yr)
1,111.85

Methodology
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), 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 5/10), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [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 (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).

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

Appendix A.1: Unlimited Emissions Calculations
Hot Oil Heating System - Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater =	2.10	MMBtu/hr
Natural Gas Usage =	18.40	MMCF/yr, and
No. 2 Fuel Oil Usage =	0.00	gal/yr

	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Criteria Pollutant	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	**Worse Case PTE**
VOC	2.60E-08	2.65E-05	2.39E-04	0.000	**0.000**
CO	8.90E-06	0.0012	0.082	0.000	**0.082**
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1839.60	0.00	**1839.60**
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.39E-04	0.00E+00	**2.39E-04**
Acenaphthene		5.30E-07		0.00E+00	**0.00E+00**
Acenaphthylene		2.00E-07		0.00E+00	**0.00E+00**
Anthracene		1.80E-07		0.00E+00	**0.00E+00**
Benzo(b)fluoranthene		1.00E-07		0.00E+00	**0.00E+00**
Fluoranthene		4.40E-08		0.00E+00	**0.00E+00**
Fluorene		3.20E-08		0.00E+00	**0.00E+00**
Naphthalene		1.70E-05		0.00E+00	**0.00E+00**
Phenanthrene		4.90E-06		0.00E+00	**0.00E+00**
Pyrene		3.20E-08		0.00E+00	**0.00E+00**
				Total HAPs	**2.39E-04**
				Worst Single HAP	**2.39E-04** **(Naphthalene)**

Methodology
Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)
No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

*Note: There are no emission factors for CH4 and N20 available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations
CO = Carbon Monoxide VOC = Volatile Organic Compound CO2 = Carbon Dioxide

Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

	Pollutant						
	PM[2]	PM10[2]	direct PM2.5[2]	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal[1]	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1] The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[1]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[2]PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal[4]	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

[3]PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

[4]The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	**0.00E+00**
Potential Emission of Worst Case HAPs (tons/yr)	**0.00E+00**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2[5]	CH4[6]	N2O[6]
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Potential Emission in tons/yr	0.00	0.000	0.000

[5]The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[5]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[6]The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[6]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	**0.00**
CO2e Total in tons/yr	**0.00**

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = 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).

Appendix A.1: Unlimited Emissions Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

Sulfur Content (S) of Fuel (% by weight) 0.00

	Pollutant						
	PM	PM10[2]	direct PM2.5[2]	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 *(.00809S)*	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal[1]	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[1]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[2]Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[2]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal[4]	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

[3]PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

[4]Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	**0.00E+00**
Potential Emission of Worst Case HAPs (tons/yr)	**0.00E+00**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2[5]	CH4[5,6]	N2O[7]
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Potential Emission in tons/yr	0.00	0.00	0.00

[5] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.
[5]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[6]According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.
[7]The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[7]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	**0.00**
CO2e Total in tons/yr	**0.00**

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = 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).

Appendix A.1: Unlimited Emissions Calculations
Asphalt Load-Out and Yard Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

The following calculations determine the unlimited/uncontrolled fugitive emissions from hot asphalt mix load-out and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	1,664,400	tons/yr

	Emission Factor (lb/ton asphalt)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Pollutant	**Load-Out**	**On-Site Yard**	**Load-Out**	**On-Site Yard**	**Total**
Total PM*	5.2E-04	NA	0.43	NA	**0.43**
Organic PM	3.4E-04	NA	0.28	NA	**0.28**
TOC	0.004	0.001	3.46	0.915	**4.4**
CO	0.001	3.5E-04	1.12	0.293	**1.42**

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

PM/HAPs	**0.020**	**0**	**0.020**
VOC/HAPs	**0.051**	**0.014**	**0.065**
non-VOC/HAPs	**2.7E-04**	**7.0E-05**	**3.4E-04**
non-VOC/non-HAPs	**0.25**	**0.07**	**0.32**

Total VOCs	**3.25**	**0.9**	**4.1**
Total HAPs	**0.07**	**0.014**	**0.09**
		Worst Single HAP	**0.018 m-/p-Xylene**

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)
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: Unlimited Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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)	Load-out	Onsite Yard	Total
PAH HAPs								
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	7.4E-04	NA	7.4E-04
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	7.9E-05	NA	7.9E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	2.0E-04	NA	2.0E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	5.4E-05	NA	5.4E-05
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	2.2E-05	NA	2.2E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	6.2E-06	NA	6.2E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	5.4E-06	NA	5.4E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	6.5E-06	NA	6.5E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	2.2E-05	NA	2.2E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	2.9E-04	NA	2.9E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	1.0E-06	NA	1.0E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	1.4E-04	NA	1.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	2.2E-03	NA	2.2E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	1.3E-06	NA	1.3E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	6.8E-03	NA	0.007
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	3.5E-03	NA	3.5E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	6.2E-05	NA	6.2E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	2.3E-03	NA	2.3E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	4.3E-04	NA	4.3E-04
Total PAH HAPs						**0.017**	**NA**	**0.017**
Other semi-volatile HAPs								
Phenol		PM/HAP	---	Organic PM	1.18%	3.3E-03	0	3.3E-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

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)	Load-out	Onsite Yard	Total
VOC		VOC	---	TOC	94%	**3.25**	**0.86**	**4.11**
non-VOC/non-HAPS								
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	2.2E-01	6.0E-02	0.284
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	1.6E-03	4.2E-04	0.002
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	2.5E-02	6.5E-03	0.031
Total non-VOC/non-HAPS					7.30%	**0.253**	**0.067**	**0.32**
Volatile organic HAPs								
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	1.8E-03	4.8E-04	2.3E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	3.3E-04	8.8E-05	4.2E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	1.7E-03	4.5E-04	2.1E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	4.5E-04	1.2E-04	5.7E-04
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	7.3E-06	1.9E-06	9.2E-06
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	5.2E-04	1.4E-04	6.6E-04
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	3.8E-03	1.0E-03	4.8E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	9.7E-03	2.6E-03	0.012
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	3.0E-03	8.1E-04	0.004
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	5.2E-03	1.4E-03	0.007
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	6.2E-05	1.6E-05	7.9E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0	0	0.0E+00
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	2.5E-04	6.7E-05	3.2E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	2.7E-04	7.0E-05	3.4E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	7.3E-03	1.9E-03	0.009
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	4.5E-05	1.2E-05	5.7E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	1.4E-02	3.8E-03	0.018
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	2.8E-03	7.3E-04	3.5E-03
Total volatile organic HAPs					1.50%	**0.052**	**0.014**	**0.066**

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.2: Unlimited Emissions Calculations
Material Storage Piles

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.50	0.275	0.096
Limestone	1.6	1.85	0.00	0.000	0.000
RAP	0.5	0.58	1.50	0.158	0.055
Gravel	1.6	1.85	0.00	0.000	0.000
Shingles	0.5	0.58	0.00	0.000	0.000
Slag	3.8	4.40	0.00	0.000	0.000
			Totals	**0.43**	**0.15**

Methodology
PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)
PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%
*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)
**Maximum anticipated pile size (acres) provided by the source.
PM2.5 = PM10
Abbreviations
RAP - recycled asphalt pavement
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A.2: Unlimited Emissions Calculations
Material Processing, Handling, Screening, and Conveying

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Ef = k*(0.0032)*[(U/5)^1.3 / (M/2)^1.4]
where: Ef = Emission factor (lb/ton)

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

Maximum Annual Asphalt Production =	1,664,400	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,581,180	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	1.79	0.85	0.13
Front-end loader dumping of materials into feeder bins	1.79	0.85	0.13
Conveyor dropping material into dryer/mixer or batch tower	1.79	0.85	0.13
Total (tons/yr)	**5.38**	**2.54**	**0.39**

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

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

Operation		Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing***		0.0054	0.0024	0.00	0.00
Screening		0.025	0.0087	19.76	6.88
Conveying		0.003	0.0011	2.37	0.87
Unlimited Potential to Emit (tons/yr) =				**22.14**	**7.75**

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
*** The source has no crushing operations
Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate matter (< 2.5 um)
PTE = Potential to Emit

Appendix A.2: Unlimited Emissions Calculations
Unpaved Roads

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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

Maximum Annual Asphalt Production =	1,664,400	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,581,180	tons/yr
Maximum Asphalt Cement/Binder Throughput =	83,220	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)	0.0	0.0	0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
	Total				**0.0E+00**	**0.0E+00**			**0.0E+00**

Average Vehicle Weight Per Trip =	0.0	tons/trip
Average Miles Per Trip =	0.000	miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	0.0	0.0	0.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365]
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.00	0.00	0.00	lb/mile
Mitigated Emission Factor, Eext =	0.00	0.00	0.00	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Cement/Binder 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
Asphalt Cement/Binder 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
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)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Methodology
Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.2: Unlimited Emissions Calculations
Paved Roads

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Maximum Annual Asphalt Production =	1,664,400	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,581,180	tons/yr
Maximum Asphalt Cement/Binder Throughput =	83,220	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	7.1E+04	2.8E+06	300	0.057	4010.7
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	7.1E+04	1.2E+06	300	0.057	4010.7
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	2.3E+03	1.1E+05	300	0.057	131.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.3E+03	2.8E+04	300	0.057	131.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	0.0E+00	0.0E+00	300	0.057	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	0.0E+00	0.0E+00	300	0.057	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	3.8E+05	7.2E+06	300	0.057	21390.4
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	3.8E+05	5.6E+06	300	0.057	21390.4
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	6.9E+04	2.8E+06	300	0.057	3940.3
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	6.9E+04	1.2E+06	300	0.057	3940.3
	Total				**1.0E+06**	**2.1E+07**			**5.9E+04**

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m^2 = Ubitiguous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)]
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.30	0.06	0.01	0.27	0.05	0.01	0.14	0.03	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.30	0.06	0.01	0.27	0.05	0.01	0.14	0.03	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.010	0.002	4.8E-04	0.009	0.002	4.4E-04	0.004	8.9E-04	2.2E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.010	0.002	4.8E-04	0.009	0.002	4.4E-04	0.004	8.9E-04	2.2E-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)	1.59	0.32	0.08	1.45	0.29	0.07	0.73	0.15	0.04
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	1.59	0.32	0.08	1.45	0.29	0.07	0.73	0.15	0.04
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.29	0.06	0.01	0.27	0.05	0.01	0.13	0.03	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.29	0.06	0.01	0.27	0.05	0.01	0.13	0.03	0.01
	Totals	**4.38**	**0.88**	**0.22**	**4.01**	**0.80**	**0.20**	**2.00**	**0.40**	**0.10**

Methodology
Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.2: Unlimited Emissions Calculations
Cold Mix Asphalt Production and Stockpiles

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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 =	0	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*

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

Methodology
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] * [Maximum Weight % of VOC Solvent in Binder]
PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [Maximum VOC Solvent Usage (tons/yr)]
PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

Appendix A.2: Unlimited Emissions Calculations
Gasoline Fuel Transfer and Dispensing Operation

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Gasoline Throughput =	0	gallons/day
=	0.0	kgal/yr

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
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.

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

Appendix A.3: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
0.080	1020	0.7

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	6.5E-04	2.6E-03	2.6E-03	2.1E-04	3.4E-02	1.9E-03	2.9E-02

*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

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	7.2E-07	4.1E-07	2.6E-05	6.2E-04	1.2E-06	**6.5E-04**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.7E-07	3.8E-07	4.8E-07	1.3E-07	7.2E-07	**1.9E-06**
					Total HAPs	**6.5E-04**
					Worst HAP	**6.2E-04**

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

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	41	0.001	0.001
Summed Potential Emissions in tons/yr	41		
CO2e Total in tons/yr	41		

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) = 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).

updated 2/13

Appendix A.3: Limited Emissions Summary
Entire Source - Drum Mix

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-970
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Asphalt Plant Limitations - Drum Mi

Maximum Hourly Asphalt Production =	190	ton/hr					
Annual Asphalt Production Limitation =	1,490,400	ton/yr					
Blast Furnace Slag Usage Limitation =	0	ton/yr	0.00	% sulfur			
Steel Slag Usage Limitation =	0	ton/yr	0.00	% sulfur			
Maximum Dryer Fuel Input Rate =	80.2	MMBtu/hr					
Natural Gas Limitation =	703	MMCF/yr					
No. 2 Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur			
No. 4 Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur			
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur			
Propane Limitation =	0	gal/yr, and	0.00	gr/100 ft3 sulfur			
Butane Limitation =	0	gal/yr, and	0.00	gr/100 ft3 sulfur			
Used/Waste Oil Limitation =	0	gal/yr, and	0.00	% sulfur	0.00 % ash	0.00 % chlorine,	0.00 % lead
Diesel Fuel Limitation - Generator < 600 HP =	0	gal/yr,and					
Diesel Fuel Limitation - Generator > 600 HP =	0	gal/yr	0.00	% sulfur			

PM Dryer/Mixer Limitation =	0.298	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.119	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.122	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
Blast Furnace Slag SO2 Dryer/Mixer Limitation =	0.740	lb/ton of slag processed
Steel Slag SO2 Dryer/Mixer Limitation =	0.0014	lb/ton of slag processed
Cold Mix Asphalt VOC Limitation =	0.0	tons/yr
HCl Limitation =	0	lb/kgal

Limited/Controlled Emissions

	Limited/Controlled Potential Emissions (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
Process Description	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO_2e	Total HAPs	Worst Case HAP	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	0.67	2.67	2.67	0.21	35.13	1.93	29.51	42,462	0.66	0.63	(hexane)
Dryer/Mixer (Process)	221.73	88.81	91.02	2.53	19.38	23.85	96.88	24,815	3.99	2.31	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.92	0.05	0.77	1,840	0.02	0.017	(hexane)
Diesel-Fired Generator < 600 HF	0	0	0	0	0	0	0	0	0	0	
Diesel-Fired Generator > 600 HF	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions*	**221.75**	**88.88**	**91.09**	**2.54**	**36.05**	**23.90**	**97.65**	**44,302**	**4.01**	**2.31**	(formaldehyde)
Fugitive Emissions											
Asphalt Load-Out and On-Site Yard	0.39	0.39	0.39	0	0	3.68	1.27	0	0.08	0.016	(xylene)
Material Storage Piles	0.43	0.15	0.15	0	0	0	0	0	0	0	
Material Processing and Handling	4.81	2.28	0.34	0	0	0	0	0	0	0	
Material Screening and Conveying	19.82	6.94	6.94	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	1.79	0.36	0.09	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	
Insignificant Combustion (natural gas-fired roof top furnace)	6.5E-04	2.6E-03	2.6E-03	2.1E-04	3.4E-02	1.9E-03	2.9E-02	41	6.5E-04	6.2E-04	(hexane)
Total Fugitive Emissions	**27.25**	**10.12**	**7.91**	**2.1E-04**	**3.4E-02**	**3.69**	**1.30**	**41**	**0.08**	**0.016**	(xylene)
Totals Limited/Controlled Emissions	**249.00**	**99.00**	**99.00**	**2.54**	**36.08**	**27.58**	**98.95**	**44,343**	**4.09**	**2.31**	(formaldehyde)

negl = negligible
Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.
*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Die
Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP
Fuel component percentages provided by the source.

Appendix A.3: Limited Emissions Summary
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-970
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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 at the source.

Fuel Limitations

Maximum Fuel Input Rate =	80	MMBtu/hr							
Natural Gas Limitation =	703	MMCF/yr							
No. 2 Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur					
No. 4 Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur					
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur					
Propane Limitation =	0	gal/yr, and	0.00	gr/100 ft3 sulfur					
Butane Limitation =	0	gal/yr, and	0.00	gr/100 ft3 sulfur					
Used/Waste Oil Limitation =	0	gal/yr, and	0.00	% sulfur	0.00	% ash	0.000	% chlorine,	0.000 % lead

Limited Emissions

	Emission Factor (units)							Limited Potential to Emit (tons/yr)							
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	3.22	0.5	0.6	0.0	0.67	0.00	0.00	0.00	0.000	0.000	0.00	**0.67**
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	0	2.67	0.00	0.00	0.00	0.000	0.000	0.00	**2.67**
SO2	0.6	0.0	0.0	0.0	0.00	0.00	0.0	0.21	0.00	0.00	0.00	0.000	0.000	0.00	**0.21**
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	35.13	0.00	0.00	0.00	0.00	0.00	0.00	**35.13**
VOC	5.5	0.20	0.20	0.28	1.0	1.10	1.0	1.93	0.00	0.00	0.00	0.00	0.00	0.00	**1.93**
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	29.51	0.00	0.00	0.00	0.00	0.00	0.00	**29.51**
Hazardous Air Pollutant															
HCl							0.0							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	7.0E-05	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**7.0E-05**
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	4.2E-06	0.00E+00	0.00E+00	0.00E+00			negl	**4.2E-06**
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	3.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**3.9E-04**
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	4.9E-04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	**4.9E-04**
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.0E-05		0.00E+00	0.00E+00			0.00E+00	**3.0E-05**
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0	1.8E-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	1.3E-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				9.1E-05	0.00E+00	0.00E+00	0.00E+00				**9.1E-05**
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	7.4E-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	8.4E-06	0.00E+00	0.00E+00	0.00E+00			negl	**8.4E-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				7.4E-04		0.00E+00	0.00E+00				**7.4E-04**
Bis(2-ethylhexyl)phthalate							2.2E-03							0.00E+00	**0.0E+00**
Dichlorobenzene	1.2E-03						8.0E-07	4.2E-04						0.00E+00	**4.2E-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				2.6E-02	0.00E+00	0.00E+00	0.00E+00				**0.026**
Hexane	1.8E+00							0.63							**0.632**
Phenol							2.4E-03							0.00E+00	**0.0E+00**
Toluene	3.4E-03		6.20E-03	6.20E-03				1.2E-03		0.00E+00	0.00E+00				**1.2E-03**
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		0.00E+00	0.00E+00			0.00E+00	**0.0E+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				**0.0E+00**
							Total HAPs	**0.66**	**0.00**	**0.00**	**0.00**	**0**	**0**	**0.00**	**0.66**

Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
Sources of AP-42 Emission Factors for fuel combustion:
Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2, No.4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5
*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

Abbreviations

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

Appendix A.3: Limited Emissions Summary
Greenhouse Gas (CO2e) Emissions from the
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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 at the source.

Fuel Limitations

Maximum Fuel Input Rate =	80	MMBtu/hr							
Natural Gas Limitation =	703	MMCF/yr							
No. 2 Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur					
No. 4 Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur					
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur					
Propane Limitation =	0	gal/yr, and	0.00	gr/100 ft3 sulfur					
Butane Limitation =	0	gal/yr, and	0.00	gr/100 ft3 sulfur					
Used/Waste Oil Limitation =	0	gal/yr, and	0.00	% sulfur	0.00	% ash	0.000	% chlorine,	0.000 % lead

Limited Emissions

	Emission Factor (units)						
CO2e Fraction	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)
CO2	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15
CH4	2.49	0.91	0.97	1.00	0.60	0.67	0.89
N2O	2.20	0.26	0.19	0.53	0.90	0.90	0.18

Global Warming Potentials (GWP)		
Name	Chemical Formula	Global warming potential
Carbon dioxide	CO_2	1
Methane	CH_4	25
Nitrous oxide	N_2O	298

	Limited Potential to Emit (tons/yr)						
CO2e Fraction	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)
CO2	42,209.97	0.00	0.00	0.00	0.00	0.00	0.00
CH4	0.88	0.00	0.00	0.00	0.00	0.00	0.00
N2O	0.77	0.00	0.00	0.00	0.00	0.00	0.00
Total	42,211.62	0.00	0.00	0.00	0.00	0.00	0.00
CO2e Equivalent Emissions (tons/yr)	42,462.17	0.00	0.00	0.00	0.00	0.00	0.00

CO2e for Worst Case Fuel* (tons/yr)
42,462.17

Methodology
Fuel Limitations from TSD Appendix A.2, page 1 of 15.
Global 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, No. 4, and Residual (No. 5 or No. 6) Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

Propane and Butane: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Waste Oil: Emission Factors for CO2, CH4, and N2O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
Limited CO2e Emissions (tons/yr) = CO2 Potential Emission of "worst case" fuel (ton/yr) x CO2 GWP (1) + CH4 Potential Emission of "worst case" fuel (ton/yr) x CH4 GWP (25) + N2O Potential Emission of "worst case" fuel (ton/yr) x N2O GWP (298).

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

Appendix A.3: Limited Emissions Summary
Dryer/Mixer - Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Maximum Hourly Asphalt Production =	190	ton/hr
Annual Asphalt Production Limitation =	1,490,400	ton/yr
PM Dryer/Mixer Limitation =	0.298	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.119	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.122	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production

	Emission Factor or Limitation (lb/ton) Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Limited/Controlled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	**Worse Case PTE**
PM*	0.298	0.298	0.298	221.7			**221.7**
PM10*	0.119	0.119	0.119	88.8			**88.8**
PM2.5*	0.122	0.122	0.122	91.0			**91.0**
SO2**	0.003	0.011	0.058	2.5			**2.5**
NOx**	0.026	0.055	0.055	19.4			**19.4**
VOC**	0.032	0.032	0.032	23.8			**23.8**
CO***	0.130	0.130	0.130	96.9			**96.9**
Hazardous Air Pollutant							
HCl			2.10E-04				**0.00**
Antimony	1.80E-07	1.80E-07	1.80E-07	1.34E-04			**1.34E-04**
Arsenic	5.60E-07	5.60E-07	5.60E-07	4.17E-04			**4.17E-04**
Beryllium	negl	negl	negl	negl			**0.00**
Cadmium	4.10E-07	4.10E-07	4.10E-07	3.06E-04			**3.06E-04**
Chromium	5.50E-06	5.50E-06	5.50E-06	4.10E-03			**4.10E-03**
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.94E-05			**1.94E-05**
Lead	6.20E-07	1.50E-05	1.50E-05	4.62E-04			**4.62E-04**
Manganese	7.70E-06	7.70E-06	7.70E-06	5.74E-03			**5.74E-03**
Mercury	2.40E-07	2.60E-06	2.60E-06	1.79E-04			**1.79E-04**
Nickel	6.30E-05	6.30E-05	6.30E-05	4.69E-02			**4.69E-02**
Selenium	3.50E-07	3.50E-07	3.50E-07	2.61E-04			**2.61E-04**
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	2.98E-02			**2.98E-02**
Acetaldehyde			1.30E-03				**0.00**
Acrolein			2.60E-05				**0.00**
Benzene	3.90E-04	3.90E-04	3.90E-04	0.29			**0.29**
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.18			**0.18**
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	2.31			**2.31**
Hexane	9.20E-04	9.20E-04	9.20E-04	0.69			**0.69**
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.04			**0.04**
MEK			2.00E-05				**0.00**
Propionaldehyde			1.30E-04				**0.00**
Quinone			1.60E-04				**0.00**
Toluene	1.50E-04	2.90E-03	2.90E-03	0.11			**0.11**
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.14			**0.14**
Xylene	2.00E-04	2.00E-04	2.00E-04	0.15			**0.15**
						Total HAPs	**3.99**
Methodology						**Worst Single HAP**	**2.31** **(formaldehyde)**

Limited/Controlled Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12
Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.
** SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.
*** CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

Abbreviations

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

Appendix A.3: Limited Emissions Summary
Greenhouse Gas (CO2e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Maximum Hourly Asphalt Production =	190	ton/hr
Annual Asphalt Production Limitation =	1,490,400	ton/yr

	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)				Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Global Warming Potentials (GWP)	Natural Gas	No. 2 Fuel Oil	Waste Oil	**CO2e for Worst Case Fuel (tons/yr)**
CO2	33	33	33	1	24,591.60	24,591.60	24,591.60	
CH4	0.0120	0.0120	0.0120	25	8.94	8.94	8.94	
N2O				298	0	0	0	
				Total	24,600.54	24,600.54	24,600.54	**24,815.16**
				CO2e Equivalent Emissions (tons/yr)	24,815.16	24,815.16	24,815.16	

Methodology

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N20 available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

Limited/Controlled Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.
Limited CO2e Emissions (tons/yr) = CO2 Potential Emission of "worst case" fuel (ton/yr) x CO2 GWP (1) + CH4 Potential Emission of "worst case" fuel (ton/yr) x CH4 GWP (25) + N2O Potential Emission of "worst case" fuel (ton/yr) x N2O GWP (298).

Abbreviations

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

Appendix A.3: Limited Emissions Summary
Dryer/Mixer Slag Processing

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

Limited Blast Furnace Slag Usage =	0	ton/yr	0.00	% sulfur
Limited Annual Steel Slag Usage =	0	ton/yr	0.00	% sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.7400	0.0
Steel Slag**	0.0014	0.00

Methodology

* Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

** Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Limited Potential to Emit SO2 from Slag (tons/yr) = [(Limited Slag Usage (ton/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations

SO2 = Sulfur Dioxide

Appendix A.3: Limited Emissions Summary
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Maximum Hot Oil Heater Fuel Input Rate =	2.10	MMBtu/hr		
Natural Gas Usage =	18	MMCF/yr		
No. 2 Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur

Unlimited/Uncontrolled Emissions

	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
	Hot Oil Heater		Hot Oil Heater		
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	0.017	0.000	**0.02**
PM10/PM2.5	7.6	3.3	0.070	0.000	**0.07**
SO2	0.6	71.0	0.006	0.000	**0.01**
NOx	100	20.0	0.920	0.000	**0.92**
VOC	5.5	0.20	0.051	0.000	**0.05**
CO	84	5.0	0.773	0.000	**0.77**
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	1.8E-06	0.00E+00	**1.8E-06**
Beryllium	1.2E-05	4.2E-04	1.1E-07	0.00E+00	**1.1E-07**
Cadmium	1.1E-03	4.2E-04	1.0E-05	0.00E+00	**1.0E-05**
Chromium	1.4E-03	4.2E-04	1.3E-05	0.00E+00	**1.3E-05**
Cobalt	8.4E-05		7.7E-07		**7.7E-07**
Lead	5.0E-04	1.3E-03	4.6E-06	0.00E+00	**4.6E-06**
Manganese	3.8E-04	8.4E-04	3.5E-06	0.00E+00	**3.5E-06**
Mercury	2.6E-04	4.2E-04	2.4E-06	0.00E+00	**2.4E-06**
Nickel	2.1E-03	4.2E-04	1.9E-05	0.00E+00	**1.9E-05**
Selenium	2.4E-05	2.1E-03	2.2E-07	0.00E+00	**2.2E-07**
Benzene	2.1E-03		1.9E-05		**1.9E-05**
Dichlorobenzene	1.2E-03		1.1E-05		**1.1E-05**
Ethylbenzene					**0**
Formaldehyde	7.5E-02	6.10E-02	6.9E-04	0.00E+00	**0.001**
Hexane	1.8E+00		1.7E-02		**0.017**
Phenol					**0**
Toluene	3.4E-03		3.1E-05		**3.1E-05**
Total PAH Haps	negl		negl		**0**
Polycyclic Organic Matter		3.30E-03		0.00E+00	**0.0E+00**
		Total HAPs =	**1.7E-02**	**0.0E+00**	**1.7E-02**
		Worse Single HAP =	**1.7E-02**	**0.0E+00**	**1.7E-02**
Methodology			**(Hexane)**	**(Formaldehyde)**	**(Hexane)**

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
Sources of AP-42 Emission Factors for fuel combustion:
Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

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

Appendix A.3: Limited Emissions Summary
Greenhouse Gas (CO2e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

Maximum Hot Oil Heater Fuel Input Rate =	2.10	MMBtu/hr		
Natural Gas Usage =	18.40	MMCF/yr		
No. 2 Fuel Oil Usage =	0.00	gal/yr,	0.00	% sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units) Natural Gas (lb/MMCF)	Emission Factor (units) No. 2 Fuel Oil (lb/kgal)	Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr)	Unlimited/Uncontrolled Potential to Emit (tons/yr) No. 2 Fuel Oil (tons/yr)
CO2	120,161.84	22,501.41	1	1,105.25	0.00
CH4	2.49	0.91	25	0.023	0.00E+00
N2O	2.20	0.26	298	0.020	0.00E+00
			Total	1,105.29	0.00
			CO2e Equivalent Emissions (tons/yr)	1,111.85	0.00

Worse Case CO2e Emissions (tons/yr)
1,111.85

Methodology

Global 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 5/10), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [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 (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).

Abbreviations

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

Appendix A.3: Limited Emissions Summary
Hot Oil Heating System - Process Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater =	2.10	MMBtu/hr
Natural Gas Usage =	18.40	MMCF/yr, and
No. 2 Fuel Oil Usage =	0.00	gal/yr

	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Criteria Pollutant	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	**Worse Case PTE**
VOC	2.60E-08	2.65E-05	2.39E-04	0.000	**2.39E-04**
CO	8.90E-06	0.0012	0.082	0.000	**0.082**
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1839.60	0.00	**1,839.60**
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.39E-04	0.00E+00	**2.39E-04**
Acenaphthene		5.30E-07		0.00E+00	**0.00E+00**
Acenaphthylene		2.00E-07		0.00E+00	**0.00E+00**
Anthracene		1.80E-07		0.00E+00	**0.00E+00**
Benzo(b)fluoranthene		1.00E-07		0.00E+00	**0.00E+00**
Fluoranthene		4.40E-08		0.00E+00	**0.00E+00**
Fluorene		3.20E-08		0.00E+00	**0.00E+00**
Naphthalene		1.70E-05		0.00E+00	**0.00E+00**
Phenanthrene		4.90E-06		0.00E+00	**0.00E+00**
Pyrene		3.20E-08		0.00E+00	**0.00E+00**
				Total HAPs	**2.39E-04**
				Worst Single HAP	**2.39E-04** **Formaldehyde**

Methodology
Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)
No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

*Note: There are no emission factors for CH4 and N20 available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations
CO = Carbon Monoxide VOC = Volatile Organic Compound CO2 = Carbon Dioxide

Appendix A.3: Limited Emissions Summary
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Output Horsepower Rating (hp)	0
Limited Hours Operated per Year	2,500
Limited Throughput (hp-hr/yr)	0
Limited Diesel Fuel Usage (gal/yr)	0

	Pollutant						
	PM[2]	PM10[2]	direct PM2.5[2]	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal[1]	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1] The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[1]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[2]PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal[4]	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Limited Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

[3]PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

[4]The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	**0.00E+00**
Limited Emission of Worst Case HAPs (tons/yr)	**0.00E+00**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2[5]	CH4[6]	N2O[6]
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Limited Emission in tons/yr	0.00	0.000	0.000

[5]The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[5]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[6]The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[6]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Limited Emissions in tons/yr	**0.00**
CO2e Total in tons/yr	**0.00**

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = 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).

Appendix A.3: Limited Emissions Summary
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Output Horsepower Rating (hp)	0
Limited Hours Operated per Year	2,500
Limited Throughput (hp-hr/yr)	0
Limited Diesel Fuel Usage (gal/yr)	0

Sulfur Content (S) of Fuel (% by weight): 0.50

	Pollutant						
	PM	PM10[2]	direct PM2.5[2]	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			4.05E-03 *(.00809S)*	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal[1]	13.70	7.85	7.85	79.18	469.82	13.80	107.67
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[1]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[2]Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[2]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal[4]	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Limited Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

[3]PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

[4]Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	**0.00E+00**
Limited Emission of Worst Case HAPs (tons/yr)	**0.00E+00**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2[5]	CH4[5,6]	N2O[7]
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Limited Emission in tons/yr	0.00	0.00	0.00

[5] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.
[5]Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

[6]According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.

[7]The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

[7]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	**0.00**
CO2e Total in tons/yr	**0.00**

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = 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).

Appendix A.3: Limited Emissions Summary
Asphalt Load-Out and Yard Emissions

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

The following calculations determine the limited fugitive emissions from hot asphalt mix load-out 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 =	1,490,400	tons/yr

	Emission Factor (lb/ton asphalt)		Limited Potential to Emit (tons/yr)		
Pollutant	**Load-Out**	**On-Site Yard**	**Load-Out**	**On-Site Yard**	**Total**
Total PM*	5.2E-04	NA	0.39	NA	**0.39**
Organic PM	3.4E-04	NA	0.25	NA	**0.25**
TOC	0.004	0.001	3.10	0.820	**3.9**
CO	0.001	3.5E-04	1.01	0.262	**1.27**

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

PM/HAPs	**0.018**	**0**	**0.018**
VOC/HAPs	**0.046**	**0.012**	**0.058**
non-VOC/HAPs	**2.4E-04**	**6.3E-05**	**3.0E-04**
non-VOC/non-HAPs	**0.22**	**0.06**	**0.28**

Total VOCs	**2.91**	**0.8**	**3.7**
Total HAPs	**0.06**	**0.012**	**0.08**
		Worst Single HAP	**0.016 m-/p-Xylene**

Methodology
The asphalt temperature and volatility factor were provided by the source.
Limited Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16
Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14)::
Total PM/PM10 Ef = 0.000181 + 0.00141(-V)e^((0.0251)(T+460)-20.43)
Organic PM Ef = 0.00141(-V)e^((0.0251)(T+460)-20.43)
TOC Ef = 0.0172(-V)e^((0.0251)(T+460)-20.43)
CO Ef = 0.00558(-V)e^((0.0251)(T+460)-20.43)
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.3: Limited Emissions Summary
Asphalt Load-Out and Yard Emissions (continued)

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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)	Load-out	Onsite Yard	Total
PAH HAPs								
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	6.6E-04	NA	6.6E-04
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	7.1E-05	NA	7.1E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	1.8E-04	NA	1.8E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	4.8E-05	NA	4.8E-05
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	1.9E-05	NA	1.9E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	5.6E-06	NA	5.6E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	4.8E-06	NA	4.8E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	5.8E-06	NA	5.8E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	2.0E-05	NA	2.0E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	2.6E-04	NA	2.6E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	9.4E-07	NA	9.4E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	1.3E-04	NA	1.3E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	2.0E-03	NA	2.0E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	1.2E-06	NA	1.2E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	6.0E-03	NA	0.006
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	3.2E-03	NA	3.2E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	5.6E-05	NA	5.6E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	2.1E-03	NA	2.1E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	3.8E-04	NA	3.8E-04
Total PAH HAPs						**0.015**	**NA**	**0.015**
Other semi-volatile HAPs								
Phenol		PM/HAP	---	Organic PM	1.18%	3.0E-03	0	3.0E-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: Emissions Calculations
Asphalt Load-Out 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)	Load-out	Onsite Yard	Total
VOC		VOC	---	TOC	94%	**2.91**	**0.77**	**3.68**
non-VOC/non-HAPS								
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	2.0E-01	5.3E-02	0.255
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	1.4E-03	3.8E-04	0.002
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	2.2E-02	5.8E-03	0.028
Total non-VOC/non-HAPS					7.30%	**0.226**	**0.060**	**0.29**
Volatile organic HAPs								
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	1.6E-03	4.3E-04	2.0E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	3.0E-04	7.9E-05	3.8E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	1.5E-03	4.0E-04	1.9E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	4.0E-04	1.1E-04	5.1E-04
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	6.5E-06	1.7E-06	8.2E-06
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	4.6E-04	1.2E-04	5.9E-04
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	3.4E-03	9.0E-04	4.3E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	8.7E-03	2.3E-03	0.011
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	2.7E-03	7.2E-04	0.003
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	4.6E-03	1.2E-03	0.006
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	5.6E-05	1.5E-05	7.1E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0	0	0.0E+00
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	2.3E-04	6.0E-05	2.9E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	2.4E-04	6.3E-05	3.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	6.5E-03	1.7E-03	0.008
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	4.0E-05	1.1E-05	5.1E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	1.3E-02	3.4E-03	0.016
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	2.5E-03	6.6E-04	3.1E-03
Total volatile organic HAPs					1.50%	**0.046**	**0.012**	**0.059**

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.3: Limited Emissions Summary
Material Storage Piles

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.50	0.275	0.096
Limestone	1.6	1.85	0.00	0.000	0.000
RAP	0.5	0.58	1.50	0.158	0.055
Gravel	1.6	1.85	0.00	0.000	0.000
Shingles	0.5	0.58	0.00	0.000	0.000
Slag	3.8	4.40	0.00	0.000	0.000
			Totals	**0.43**	**0.15**

Methodology
PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)
PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%
*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)
**Maximum anticipated pile size (acres) provided by the source.
PM2.5 = PM10
Abbreviations
RAP = recycled asphalt pavement
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A.3: Limited Emissions Summary
Material Processing, Handling, Screening, and Conveying

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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

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

Ef = k*(0.0032)*[(U/5)^1.3 / (M/2)^1.4]

where:

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

Annual Asphalt Production Limitation =	1,490,400	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,415,880	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	1.60	0.76	0.11
Front-end loader dumping of materials into feeder bins	1.60	0.76	0.11
Conveyor dropping material into dryer/mixer or batch tower	1.60	0.76	0.11
Total (tons/yr)	**4.81**	**2.28**	**0.34**

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

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing***	0.0054	0.0024	0.00	0.00
Screening	0.025	0.0087	17.70	6.16
Conveying	0.003	0.0011	2.12	0.78
Limited Potential to Emit (tons/yr) =			**19.82**	**6.94**

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 b
weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilize
between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
**Assumes PM10 = PM2.5
*** The source has no crushing operations

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A.3: Limited Emissions Summary
Unpaved Roads

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

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 =	1,490,400	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,415,880	tons/yr
Maximum Asphalt Cement/Binder Throughput =	74,520	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)	0.0	0.0	0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.0	0.0	0.0	0.0E+00	0.0E+00	0	0.000	0.0
	Total				**0.0E+00**	**0.0E+00**			**0.0E+00**

Average Vehicle Weight Per Trip =	0.0	tons/trip
Average Miles Per Trip =	0.000	miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	0.0	0.0	0.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365]
Mitigated Emission Factor, Eext = E * [(365 - P)/365]

where P =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.00	0.00	0.00	lb/mile
Mitigated Emission Factor, Eext =	0.00	0.00	0.00	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
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)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Methodology
Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.3: Limited Emissions Summary
Paved Roads

Company Name: Wayne Asphalt & Construction Co., Inc.
Address City IN Zip: 6600 Ardmore Ave, Fort Wayne, IN 46809-9703
Permit Number: F003-33445-03212
Reviewer: Nida Habeeb

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 =	1,490,400	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,415,880	tons/yr
Maximum Asphalt Cement/Binder Throughput =	74,520	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	6.3E+04	2.5E+06	300	0.057	3591.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	6.3E+04	1.1E+06	300	0.057	3591.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	2.1E+03	9.9E+04	300	0.057	117.6
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.1E+03	2.5E+04	300	0.057	117.6
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	0.0E+00	0.0E+00	300	0.057	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	0.0E+00	0.0E+00	300	0.057	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	3.4E+05	6.5E+06	300	0.057	19154.2
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	3.4E+05	5.1E+06	300	0.057	19154.2
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	6.2E+04	2.5E+06	300	0.057	3528.4
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	6.2E+04	1.1E+06	300	0.057	3528.4
	Total				**9.3E+05**	**1.9E+07**			**5.3E+04**

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

Unmitigated Emission Factor, Ef =[k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m^2 = Ubitiguous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)]
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.27	0.05	0.01	0.24	0.05	0.01	0.12	0.02	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.27	0.05	0.01	0.24	0.05	0.01	0.12	0.02	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.009	0.002	4.3E-04	0.008	0.002	3.9E-04	0.004	8.0E-04	2.0E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.009	0.002	4.3E-04	0.008	0.002	3.9E-04	0.004	8.0E-04	2.0E-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)	1.42	0.28	0.07	1.30	0.26	0.06	0.65	0.13	0.03
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	1.42	0.28	0.07	1.30	0.26	0.06	0.65	0.13	0.03
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.26	0.05	0.01	0.24	0.05	0.01	0.12	0.02	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.26	0.05	0.01	0.24	0.05	0.01	0.12	0.02	0.01
	Totals	**3.92**	**0.78**	**0.19**	**3.59**	**0.72**	**0.18**	**1.79**	**0.36**	**0.09**

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.3: Limited Emissions Summary
Cold Mix Asphalt Production and Stockpiles

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Limited VOC Emissions from the Sum of the Liquid Binders = 0.0 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

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

Methodology
Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [VOC Solvent Usage Limitation (tons/yr)]
Limited PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
Limited PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

Appendix A.3: Limited Emissions Summary
Gasoline Fuel Transfer and Dispensing Operation

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.

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

Gasoline Throughput =	0	gallons/day
=	0.0	kgal/yr

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
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.

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

Appendix A.4: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Wayne Asphalt & Construction Co., Inc.**
Address City IN Zip: **6600 Ardmore Ave, Fort Wayne, IN 46809-9703**
Permit Number: **F003-33445-03212**
Reviewer: **Nida Habeeb**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
0.080	1020	0.7

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	6.5E-04	2.6E-03	2.6E-03	2.1E-04	3.4E-02	1.9E-03	2.9E-02

*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

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	7.2E-07	4.1E-07	2.6E-05	6.2E-04	1.2E-06	**6.5E-04**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.7E-07	3.8E-07	4.8E-07	1.3E-07	7.2E-07	**1.9E-06**
					Total HAPs	**6.5E-04**
					Worst HAP	**6.2E-04**

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

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	41	0.001	0.001
Summed Potential Emissions in tons/yr	41		
CO2e Total in tons/yr	41		

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) = 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).

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

March 12, 2014

Mr. Todd K Guthrie
Wayne Asphalt & Construction Co., Inc.
6600 Ardmore Avenue
Fort Wayne, IN 46809

Re: Public Notice
Wayne Asphalt & Construction Co., Inc.
Permit Level: FESOP Renewal
Permit Number: 003-33445-03212

Dear Mr. Guthrie:

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 Public Library, 2200 Lower Huntington Road 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 March 14, 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 Nida Habeeb, 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 4-8531 or dial (317) 234-8531.

Sincerely,

Greg Hotopp

Greg Hotopp
Permits Branch
Office of Air Quality

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

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 Public Comment

March 12, 2014
Wayne Asphalt & Construction Co., Inc.
003-33445-03212

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

March 12, 2014

Journal Gazette
Terrie Brown Smith
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 Wayne Asphalt & Construction Co., Inc., 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 March 14, 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: Federally Enforceable State Operating Permit
Permit Number: 003-33445-03212

Enclosure
PN Newspaper.dot 6/13/2013

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

March 12, 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: Wayne Asphalt & Construction Co., Inc.
Permit Number: 003-33445-03212

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 3/12/2014 Wayne Asphalt & Construction Co, Inc 003-33445-03212 Draft		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	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Todd K Guthrie Wayne Asphalt & Construction Co, Inc 6600 Ardmore Ave Fort Wayne IN 46809-9703 (Source CAATS)									
2		Daniel & Sandy Trimmer 15021 Yellow River Road Columbia City IN 46725 *(Affected Party)*									
3		Duane & Deborah Clark Clark Farms 6973 E. 500 S. Columbia City IN 46725 *(Affected Party)*									
4		Fort Wayne City Council and Mayors Office 200 E Berry Street Ste 120 Fort Wayne IN 46802 *(Local Official)*									
5		Allen County Public Library, Waynedale Branch 2200 Lower Huntington Rd Fort Wayne IN 46809 *(Library)*									
6		Mr. Jeff Coburn Plumbers & Steamfitters, Local 166 2930 W Ludwig Rd Fort Wayne IN 46818-1328 *(Affected Party)*									
7		Allen Co. Board of Commissioners 200 E Berry Street Ste 410 Fort Wayne IN 46802 *(Local Official)*									
8		Fort Wayne-Allen County Health Department 200 E Berry St Suite 360 Fort Wayne IN 46802 *(Health Department)*									
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13											
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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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