



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: February 11, 2010

RE: J.H. Rudolph & Company, Inc - St. Croix Plant / 123-28142-00025

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

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot12/03/07



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Federally Enforceable State Operating Permit (FESOP) Renewal OFFICE OF AIR QUALITY

J.H. Rudolph & Company, Inc. - St. Croix Plant
12050 Optical Road
English, Indiana 47118

(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.

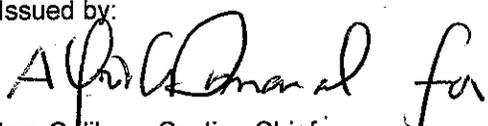
Operation Permit No.: F123-28142-00025	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: February 11, 2010 Expiration Date: February 11, 2020

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SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary drum hot-mix asphalt plant, with the capability of producing warm-mix asphalt, and a cold-mix asphalt production operation.

Source Address:	12050 Optical Road, English, Indiana 47118
Mailing Address:	PO Box 5228, Evansville, IN 47716-5226
General Source Phone Number:	(812) 547-1400
SIC Code:	2951
County Location:	Perry
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 1 of 28 Source Categories

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

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

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

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

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and consisting of the following:
- (1) Aggregate storage piles consisting of sand, gravel, and steel slag, as follows;
 - (A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres
 - (B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres
 - (C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres
 - (2) Four (4) aggregate conveyors;
 - (3) One (1) scalping screen;

- (4) Six (6) cold feed bins;

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

- (c) One (1) recycled asphalt pavement (RAP) system, constructed in 2005, with a maximum throughput capacity of one hundred (100) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:

- (1) One (1) recycled asphalt pavement (RAP) Crusher;
- (2) Five (5) RAP conveyors;
- (3) Two (2) RAP feeder bins; and
- (4) One (1) RAP screen.
- (5) RAP storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

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

- (d) One (1) cold-mix asphalt production operation, constructed in 2005, uncontrolled and exhausting to the atmosphere, and including:

- (1) cold-mix (stockpile mix) asphalt storage piles;
- (2) One (1) split compartment prime asphalt storage tank, constructed in 2005, with a maximum storage capacity of 15,000 gallons, uncontrolled and exhausting to the atmosphere; and
- (3) One (1) emulsified asphalt storage tank, constructed in 2005, with a maximum storage capacity of 10,000 gallons, uncontrolled and exhausting to the atmosphere.

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) liquid asphalt cement hot oil heating system, constructed in 2005, and consisting of the following:
- (1) One (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, using No. 2 distillate fuel oil, No. 4 distillate fuel oil, re-refined waste oil, and biodiesel as backup fuels, uncontrolled and exhausting to one (1) stack, identified as EP2;
- (b) One (1) natural gas fired inert gas generator, constructed in 2005, with a maximum rated heat input capacity of two hundred twenty-eight ten-thousandths (0.0228) MMBtu/hr, uncontrolled and exhausting to the atmosphere;
- (c) One (1) liquid asphalt storage tank, with a maximum storage capacity of 20,000 gallons, uncontrolled and exhausting to the atmosphere;
- (d) One (1) liquid asphalt storage tank, with a maximum storage capacity of 25,000 gallons, uncontrolled and exhausting to the atmosphere; and

- (e) One (1) liquid asphalt storage tank, with a maximum storage capacity of 18,000 gallons, uncontrolled and exhausting to the atmosphere;
- (f) One (1) No. 2 distillate fuel oil storage tank, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;
- (g) One (1) waste oil storage tank, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;
- (h) One (1) gasoline fuel transfer and dispensing operation, handling less than or equal to 1,300 gallons per day, having a maximum storage capacity less than or equal to 10,500 gallons, and including the following:
 - (1) One (1) gasoline storage tank, constructed in 2005, with a maximum storage capacity of 3,000 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 3,000 gallon gasoline storage tank, is considered an affected facility.
- (i) One (1) petroleum fuel, other than gasoline, dispensing facility, having a maximum storage capacity of less than or equal to 10,500 gallons and dispensing less than or equal to 230,000 gallons per month, including the following:
 - (1) One (1) No. 2 on-road fuel tank, constructed in 2005, with a maximum storage capacity of 1,200 gallons, uncontrolled and exhausting to the atmosphere;
- (j) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (k) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities; and
- (l) Paved and unpaved roads and parking lots with public access [326 IAC 6-4].

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, F123-28142-00025, 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. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ 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) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This

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

- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.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 the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) 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.
- (b) 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 or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.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, and Southwest Regional Office 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 Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Southwest Regional Office phone: (812) 380-2305; fax: (812) 380-2304.
 - (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 by 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 the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ 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.

- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report. Any emergencies that have been previously reported pursuant to paragraph (b)(5) of this condition and certified by an "authorized individual" need only be referenced by the date of the original report.

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

- (a) All terms and conditions of permits established prior to F123-28142-00025 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 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

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

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

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

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

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

B.16 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 the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ 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.17 Permit Renewal [326 IAC 2-8-3(h)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
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 in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 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 shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.19 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

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

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

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

and

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

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

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

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

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

B.20 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.21 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.22 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

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

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

B.23 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 within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ 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.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

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

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

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

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than one hundred (100) 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 5-1-3 (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, or incinerate any waste or refuse, except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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

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

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

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the attached plan as in Attachment A.

C.8 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.9 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 two hundred sixty (260) linear feet on pipes or one hundred sixty (160) square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) Asbestos removal or demolitions start date;
 - (B) Removal or demolitions 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 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.10 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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

Indiana Department of Environmental Management
Compliance 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 certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ 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.11 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.12 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

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

Indiana Department of Environmental Management
Compliance 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 the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

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

C.14 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

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

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

C.15 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.16 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.17 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

- (a) Upon detecting an excursion or exceedance, the Permittee shall 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 emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned 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 within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (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 maintain the following records:
 - (1) monitoring data;
 - (2) monitor performance data, if applicable; and
 - (3) corrective actions taken.

C.18 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

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

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

C.19 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance or ninety (90) days of initial start-up, whichever is later.

C.20 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

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

Indiana Department of Environmental Management
Compliance 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) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) 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.21 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 the standards for recycling and emissions reduction:

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

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Drum, hot-mix asphalt plant

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

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

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and consisting of the following:

- (1) Aggregate storage piles consisting of sand, gravel, and steel slag, as follows;

- (A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres
- (B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres
- (C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

- (2) Four (4) aggregate conveyors;

- (3) One (1) scalping screen;

- (4) Six (6) cold feed bins;

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

- (c) One (1) recycled asphalt pavement (RAP) system, constructed in 2005, with a maximum throughput capacity of one hundred (100) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:

- (1) One (1) recycled asphalt pavement (RAP) Crusher;

- (2) Five (5) RAP conveyors;

- (3) Two (2) RAP feeder bins; and

- (4) One (1) RAP screen.

- (5) RAP storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

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

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

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

D.1.1 PSD Limits [326 IAC 2-2]

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

- (a) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM emissions from the dryer/mixer shall not exceed eight hundred fifty-eight thousandths (0.858) pounds of PM per ton of asphalt produced.

Compliance with these limitations, combined with the limits and emissions from other emission units at this source will render 326 IAC 2-7, Part 70, and 326 IAC 2-2, PSD, not applicable.

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

Pursuant to 326 IAC 2-8-4 (FESOP), the amount of slag used in the production of asphalt shall not exceed three hundred seventy-five thousand (375,000) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit, combined with the potential SO₂ emissions from all other emission units at this source, shall limit the source-wide total potential to emit SO₂ to less than one hundred (100) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

D.1.3 FESOP Limits [326 IAC 2-8-4] [326 IAC 8-1-6] [326 IAC 2-2]

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

- (a) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) PM₁₀ emissions from the dryer/mixer shall not exceed three hundred forty-five thousandths (0.345) pounds of PM₁₀ per ton of asphalt produced.
- (c) PM_{2.5} emissions from the dryer/mixer shall not exceed three hundred sixty-four thousandths (0.364) pounds of PM_{2.5} per ton of asphalt produced.
- (d) SO₂ emissions from the dryer/mixer shall not exceed (0.058) pounds of SO₂ per ton of asphalt produced.
- (e) CO emissions from the dryer/mixer shall not exceed one hundred thirty thousandths (0.130) pounds of CO per ton of asphalt produced.

Compliance with these limits, combined with the potential to emit PM₁₀, PM_{2.5}, SO₂, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM₁₀, PM_{2.5}, SO₂, and CO to less than one hundred (100) tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

D.1.4 Fuel Limitations [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to limit the SO₂, NO_x, HCl and combined HAP emissions from all emission units at this source, the Permittee shall comply with the following:

- (a) The sulfur content of the No. 2 and No. 4 distillate fuel oils, and the biodiesel, each, shall not exceed five-tenths percent (0.5%) by weight;

- (b) The sulfur content of the re-refined waste oil shall not exceed one percent (1.00%) by weight;
- (c) The ash content of the re-refined waste oil shall not exceed one percent (1.00%) by weight;
- (d) The lead content of the re-refined waste oil shall not exceed thirty-thousandths percent (0.030%) by weight;
- (e) The chlorine content of the re-refined waste oil shall not exceed ten-hundredths percent (0.10%) by weight; and
- (f) The HCl emissions from the dryer/mixer burner shall not exceed six and six tenths (6.6) pounds of HCl per one thousand (1000) gallons of re-refined fuel oil burned, based on a chlorine content limit of ten hundredths percent (0.10%) by weight.
- (g) Single Fuel Usage Limitations:
When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner the usage of fuel shall be limited as follows:
 - (1) Re-refined waste oil usage shall not exceed 1,211,028 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
 - (2) Natural gas usage shall not exceed 1,009 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month;
 - (3) No. 2 distillate fuel oil usage shall not exceed 2,507,340 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and
 - (4) No. 4 distillate fuel oil usage shall not exceed 2,373,615 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (5) Biodiesel usage shall not exceed 2,507,340 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (h) Multiple Fuel Usage Limitation:
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner and all other combustion equipment, emissions from the dryer/mixer and all other combustion equipment shall be limited as follows:
 - (1) Nitrogen oxides (NOx) emissions from the dryer/mixer, and all other combustion equipment, shall be less than one hundred (100) tons per twelve (12) consecutive month period, with compliance determined at the end of each month, and
 - (2) Sulfur dioxide (SO₂) emissions from the dryer/mixer, and all other combustion equipment, shall be less than one hundred (100) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the potential emissions from all other emission units at this source, shall limit the source-wide total potential to emit NOx and SO₂ to less than one hundred (100) tons per twelve (12) consecutive month period, each, HCl to less than ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

D.1.5 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1][326 IAC 7-2-1]

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

- (a) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per million Btu heat input when using distillate oil (including the No. 2 and No. 4 distillate fuel oils, and biodiesel).
- (b) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed one and sixty hundredths (1.60) pounds per million Btu heat input when using residual oil and re-refined waste oil.
- (c) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.6 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

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

- (a) The asphalt production rate shall not exceed 500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) VOC emissions from the dryer/mixer shall not exceed thirty-two thousandths (0.032) pounds of VOC per ton of asphalt produced.

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

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

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the RAP grinding/crushing, material handling, screening, conveying, and material transfer points, dryer/mixer, and any/all related control device(s).

Compliance Determination Requirements

D.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with the Conditions D.1.1 and D.1.3, the Permittee shall perform the following:

- (a) In order to demonstrate compliance with Conditions D.1.1(b), within five (5) years from the last valid compliance demonstration, the Permittee shall perform PM testing on the exhaust from the baghouse controlling the dryer/mixer, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.
- (b) In order to demonstrate compliance with Conditions D.1.3(b) and D.1.3(c), the Permittee shall perform PM_{2.5} and PM₁₀ testing on the exhaust from the baghouse controlling the dryer/mixer, within 180 days of publication of the new or revised condensable PM test method(s) referenced in the U. S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5}), signed on May 8th, 2008, or within five (5) years of issuance of this FESOP Renewal, No. 123-28142-00025, whichever is later. 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 Section C - Performance Testing. PM₁₀ and PM_{2.5}, each, includes filterable and condensable PM.

D.1.9 Particulate Matter (PM, PM10, and PM2.5) Control

- (a) In order to comply with Conditions D.1.1(b), D.1.3(b), and D.1.3(c), the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.10 Sulfur Dioxide (SO₂) Emissions and Sulfur Content

Compliance with the sulfur dioxide emissions and sulfur content limitations in Conditions D.1.4(a), D.1.4(b), D.1.5(a), and D.1.5(b), shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), compliance shall be demonstrated on a thirty (30) day calendar-month average.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate compliance with sulfur dioxide emissions and sulfur content limitations by:
 - (1) Providing vendor analysis of heat content and sulfur content of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the fuel sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Fuel samples may be collected from the fuel tank immediately after the fuel tank is filled and before any fuel is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer/mixer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

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

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

- (a) In order to comply with Conditions D.1.4(c), the Permittee shall demonstrate that the ash content of the fuel used for the dryer/mixer burner, and all other fuel combustion equipment, does not exceed one percent (1.00%) by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.
- (b) In order to comply with Conditions D.1.4(d), the Permittee shall demonstrate that the lead content of the fuel used in the dryer/mixer burner, and all other fuel combustion equipment, does not exceed thirty-thousandths percent (0.030%) by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.
- (c) In order to comply with Conditions D.1.4(e) and D.1.4(f), the Permittee shall demonstrate that the chlorine content of the fuel used in the dryer/mixer burner, and all other fuel combustion equipment, does not exceed ten-hundredths percent (0.10%) by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

D.1.12 Multiple Fuel Usage Limitation

In order to comply with Condition D.1.4(h) when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, the Permittee shall limit fuel usage in the dryer/mixer burner according to the following formulas:

(a) Sulfur dioxide emission calculation

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

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur content
- F = gallons of No. 4 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur
- B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur
- W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.0% sulfur
- E_G = 0.60 lb/million cubic feet of natural gas
- E_O = 71 pounds/1000 gallons of No. 2 distillate fuel oil
- E_F = 75 pounds/1000 gallons of No. 4 distillate fuel oil
- E_B = 71 pounds/1000 gallons of biodiesel
- E_W = 147 lb/1000 gallons of re-refined waste oil

(b) Nitrogen oxide emission calculation

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

where:

- N = tons of nitrogen oxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 distillate fuel oil used in last 12 months
- F = gallons of No. 4 distillate fuel oil used in last 12 months
- B = gallons of biodiesel used in last 12 months
- W = gallons of re-refined waste oil used in last 12 months
- E_G = 190 lb/million cubic feet of natural gas
- E_O = 24 lb/1000 gallons of No. 2 distillate fuel oil
- E_F = 47 lb/1000 gallons of No. 4 distillate fuel oil
- E_B = 26.4 lb/1000 gallons of biodiesel
- E_W = 19 lb/1000 gallons of re-refined waste oil

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

D.1.13 Visible Emissions Notations

- (a) Visible emission notations of the grinding/crushing, material handling, screens, conveyors, material transfer points, and dryer/ mixer stack (EP1) exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

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

D.1.14 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

- (a) The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer at least once per day when the dryer/mixer is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of two (2.0) and six (6.0) inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (b) 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 at least once every six (6) months.

D.1.15 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For a single compartment baghouse 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, or dust traces.

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

D.1.16 Record Keeping Requirements [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-3][326 IAC 7-1.1-2][326 IAC 7-2-1]

- (a) To document compliance with Conditions D.1.1(a), D.1.3(a) and D.1.6(a), the Permittee shall maintain records of the amount of asphalt produced per month. Records necessary to demonstrate compliance shall be available within thirty (30) days of the end of each compliance period.

- (b) To document compliance with Conditions D.1.4, and D.1.5, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken daily and shall be complete and sufficient to establish compliance with the SO₂, NO_x, HCl, and combined HAPs emission limits established in Conditions D.1.4 and D.1.5. For the annual fuel limits, the compliance determination period is the most recent twelve (12) consecutive month period. For the sulfur and HCl content limits, the compliance determination period is each calendar month.
- (1) Calendar dates covered in the compliance determination period;
 - (2) Actual fuel usage, sulfur content, heat content and equivalent sulfur dioxide and nitrogen oxides emission rates for each fuel used at the source per month;
 - (3) Actual re-refined waste oil usage, chlorine content in weight percent (wt%), ash content in weight percent (wt%), lead content in weight percent (wt%), and equivalent hydrogen chloride (HCl) emission rate per month;
 - (4) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and

If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:

- (5) Fuel supplier certifications;
- (6) The name of the fuel supplier; and
- (7) A statement from the fuel supplier that certifies the sulfur content of No. 2 distillate fuel oil, No. 4 distillate fuel oil, biodiesel, and re-refined waste oil, and the chlorine, ash, and lead content of the re-refined waste oil.

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

- (c) To document compliance with Conditions D.1.4(h) and D.1.12 when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner and all other combustion equipment, the Permittee shall maintain records of actual fuel usage and equivalent nitrogen oxides, sulfur dioxide, and hydrogen chloride emission rates for each fuel used at the source per month.
- (d) To document compliance with Condition D.1.13, the Permittee shall maintain daily records of the visible emission notations from each of the conveyors, screens, material transfer points, and dryer/mixer stack (EP1) exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the plant did not operate that day).
- (e) To document compliance with Condition D.1.14, the Permittee shall maintain daily records of the pressure drop across the baghouse controlling the dryer/mixer. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g., the dryer/mixer did not operate that day).
- (f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.17 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.1(a), D.1.3(a), D.1.4(g), D.1.4(h), D.1.6(a) and D.1.12, shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2

FACILITY CONDITIONS

Emissions Unit Description: Cold-mix Asphalt Production and Storage

- (d) One (1) cold-mix asphalt production operation, constructed in 2005, uncontrolled and exhausting to the atmosphere, and including:
- (1) cold-mix (stockpile mix) asphalt storage piles;
 - (2) One (1) split compartment prime asphalt storage tank, constructed in 2005, with a maximum storage capacity of 15,000 gallons, uncontrolled and exhausting to the atmosphere; and
 - (3) One (1) emulsified asphalt storage tank, constructed in 2005, with a maximum storage capacity of 10,000 gallons, uncontrolled and exhausting to the atmosphere.

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

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

D.2.1 Volatile Organic Compounds (VOC) [326 IAC 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the VOC emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. This shall be achieved by limiting the total VOC solvent usage in of any one of the selected binders as follows:

When more than one binder is used, the formula in subsection (f) must be applied so that the total VOC emissions do not sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (a) Cut back asphalt rapid cure, containing a maximum of twenty-five and three tenths percent (25.3%) of the liquid binder by weight of VOC solvent and ninety-five percent (95%) by weight of VOC solvent evaporating.

Cutback asphalt rapid cure liquid binder usage shall not exceed seventy-two and fifty-one hundredths (72.51) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (b) Cut back asphalt medium cure, containing a maximum of twenty-eight and six tenths percent (28.6%) of the liquid binder by weight of VOC solvent and seventy percent (70%) by weight of VOC solvent evaporating.

Cutback asphalt medium cure liquid binder usage shall not exceed ninety-eight and forty-one hundredths (98.41) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (c) Cut back asphalt slow cure, containing a maximum of twenty percent (20%) of the liquid binder by weight of VOC solvent and twenty-five percent (25%) by weight of VOC solvent evaporating.

Cutback asphalt slow cure liquid binder usage shall not exceed two hundred seventy-five and fifty-six hundredths (275.56) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (d) Emulsified asphalt with solvent, containing a maximum of fifteen percent (15%) of liquid binder by weight of VOC solvent and forty-six and four tenths percent (46.4%) by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume

Emulsified asphalt with solvent liquid binder usage shall not exceed one hundred and forty-eight and forty-seven hundredths (148.47) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (e) Other asphalt with solvent binder, containing a maximum twenty-five and nine tenths percent (25.9%) of the liquid binder of VOC solvent and two and five tenths percent (2.5%) by weight of the VOC solvent evaporating.

Other asphalt with solvent liquid binder shall not exceed two thousand seven hundred fifty-five and fifty-six hundredths (2,755.56) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (f) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period, with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows.

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

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

Compliance with these limits, combined with the VOC emissions from other units at this source, will limit source-wide VOC emissions to less than one hundred (100) tons per year, and render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD), not applicable.

D.2.2 Volatile Organic Compounds (VOC) [326 IAC 8-5-2]

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

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

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

D.2.3 Record Keeping Requirements

To document compliance with Condition D.2.1, the Permittee shall maintain records in accordance with (a) through (d) below. Records maintained for (a) through (d) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.2.1.

- (a) Calendar dates covered in the compliance determination period;
- (b) Emulsified asphalt binder usage per month since the last compliance determination period;
- (c) VOC solvent content by weight of the emulsified asphalt binder used each month; and
- (d) Amount of VOC solvent used in the production of cold-mix asphalt, and the amount of VOC emitted each month.

All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.4 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Insignificant Activities

- (a) One (1) liquid asphalt cement hot oil heating system, constructed in 2005, and consisting of the following:
 - (1) One (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, using No. 2 distillate fuel oil, No. 4 distillate fuel oil, biodiesel, and re-refined waste oil as backup fuels, uncontrolled and exhausting to one (1) stack, identified as EP2;

(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 Emissions [326 IAC 6-2]

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

SECTION D.4

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Paved & Unpaved Roads

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

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

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

SECTION E.1

NSPS REQUIREMENTS

Emissions Unit Description: Hot-Mix Asphalt Plant

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

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

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and consisting of the following:

- (1) Aggregate storage piles consisting of sand, gravel, and steel slag, as follows;

(A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

- (2) Four (4) aggregate conveyors;

- (3) One (1) scalping screen;

- (4) Six (6) cold feed bins;

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

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

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

E.1.1 NSPS Subpart I Requirements - Standards of Performance for Hot Mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12-1]

Pursuant to 40 CFR 60.90(a), the affected facility to which the provisions of this subpart apply is each hot mix asphalt facility, as defined in § 60.91(a), that commences construction or modification after June 11, 1973. 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.

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

- (1) 40 CFR 60.90;

- (2) 40 CFR 60.91;
- (3) 40 CFR 60.92; and
- (4) 40 CFR 60.93.

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

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

SECTION E.2

NSPS REQUIREMENTS

Emissions Unit Description: Recycled Asphalt Pavement (RAP) System

- (c) One (1) recycled asphalt pavement (RAP) system, constructed in 2005, with a maximum throughput capacity of one hundred (100) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:
- (1) One (1) recycled asphalt pavement (RAP) Crusher;
 - (2) Five (5) RAP conveyors;
 - (3) Two (2) RAP feeder bins; and
 - (4) One (1) RAP screen.
 - (5) RAP storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

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

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

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

E.2.1 40 CFR 60, Subpart OOO Requirements - Standards of Performance for Nonmetallic Mineral Processing Plants [40 CFR Part 60, Subpart OOO] [326 IAC 12-1]

Pursuant to CFR Part 60, Subpart OOO, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart OOO, which are incorporated by reference as 326 IAC 12-1 for the recycled asphalt pavement (RAP) system as specified as follows. Pursuant to 40 CFR 60.670, the affected facility to which the provisions of this subpart apply is each crusher and grinding mill in each recycled asphalt pavement (RAP) system, at hot mix asphalt facilities, that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement.

The recycled asphalt pavement (RAP) facility is subject to the following portions of 40 CFR 60, Subpart OOO (included as Attachment C of this permit):

- (1) 40 CFR 60.670;
- (2) 40 CFR 60.671;
- (3) 40 CFR 60.672;
- (4) 40 CFR 60.673;
- (5) 40 CFR 60.674;
- (6) 40 CFR 60.675; and
- (7) 40 CFR 60.676.

An affected facility that is subject to the provisions of Subpart I, or that follows in the plant process any facility subject to the provisions of Subpart I, is not subject to the provisions of this Subpart.

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the recycled asphalt pavement (RAP) facility except when otherwise specified in 40 CFR 60 Subpart OOO.

SECTION E.3

NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-6.1-5(a)(1): Gasoline Dispensing Facilities

(h) One (1) gasoline fuel transfer and dispensing operation, handling less than or equal to 1,300 gallons per day, having a maximum storage capacity less than or equal to 10,500 gallons, and including the following:

(1) One (1) gasoline storage tank, constructed in 2005, with a maximum storage capacity of 3,000 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 3,000 gallon gasoline storage tank, is considered an affected facility.

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

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

E.3.1 National Emission Standards for Hazardous Air Pollutants (NESHAPs): Area Source Standards for Source Category: Gasoline Dispensing Facilities [40 CFR 63, Subpart CCCCCC] [326 IAC 20]

Pursuant to 40 CFR § 63.11112(a), the emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing gasoline dispensing facilities (GDF), located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.

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

- (1) 40 CFR 63.11504(a)(1)(iii), (a)(2), (a)(3);
- (2) 40 CFR 63.11505(a)(1), (b), (e);
- (3) 40 CFR 63.11506(a);
- (4) 40 CFR 63.11507(g);
- (5) 40 CFR 63.11508(a), (b), (d)(1), (d)(2), (d)(8);
- (6) 40 CFR 63.11509(a), (b), (c)(6), (c)(7), (d), (e), (f);
- (7) 40 CFR 63.11510;
- (8) 40 CFR 63.11511; and
- (9) 40 CFR 63.11512.

The requirements of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart 6C.

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

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

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025

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: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025

This form consists of 2 pages

Page 1 of 2

- | |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none">• The Permittee must notify the Office of Air Quality (OAQ), within four (4) daytime 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: _____

A certification is not required for this report.

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner

Parameter: Combined Hot-Mix and Warm-mix Asphalt Production

Limit: The combined maximum annual hot-mix and warm-mix asphalt production shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
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: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner

Parameter: Steel Slag Usage

Limit: Maximum steel slag usage shall not exceed 375,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
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: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY COMPLIANCE DATA SECTION

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
 Source Address: 12050 Optical Road, English, Indiana 47118
 Mailing Address: PO Box 5228, Evansville, IN 47716-5226
 FESOP Permit No.: F123-28142-00025
 Facility: Dryer/mixer burner

Parameter: Single Fuel Usage

Limit: Sulfur Dioxide (SO₂) and Nitrogen Oxides (NO_x) emissions shall not exceed one hundred (100) tons per twelve (12) consecutive month period, each. Additionally, Hydrogen Chloride (HCl) emissions shall not exceed ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs shall not exceed twenty-five (25) tons per twelve (12) consecutive month period. When combusting only one type of fuel in the dryer/mixer burner, the usage of fuel shall be limited as follows:

Fuel Type (units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	1,009
No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)	2,507,340
No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)	2,373,615
Biodiesel ≤ 0.5 wt% sulfur (gallons)	2,507,340
Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)	1,211,028

QUARTER: _____ YEAR: _____

The following fuel was the only fuel combusted over the previous 12-month period: _____

(combustion of more than one fuel requires the use of the "Multiple Fuel Quarterly Report" form)

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

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

Submitted by: _____ Date: _____

Title / Position: _____ Phone: _____

Signature: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Page 1 of 2

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner

Parameters: Multiple Fuel Usage / Sulfur Dioxide (SO₂) & Nitrogen Oxides (NO_x) Emissions

Limit: Sulfur Dioxide (SO₂) emissions from the entire source shall not exceed one hundred (100) tons per twelve (12) consecutive month period. When combusting more than one fuel in the dryer/mixer burner, the Permittee shall limit fuel usage according to the following equation:

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

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur content
- F = gallons of No. 4 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur
- B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur
- W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.0% sulfur
- E_G = 0.60 lb/million cubic feet of natural gas
- E_O = 71 pounds/1000 gallons of No. 2 distillate fuel oil
- E_F = 75 pounds/1000 gallons of No. 4 distillate fuel oil
- E_B = 71 pounds/1000 gallons of biodiesel
- E_W = 147 lb/1000 gallons of re-refined waste oil

Limit: Nitrogen oxides (NO_x) emissions from the entire source shall not exceed one hundred (100) tons per twelve (12) consecutive month period. When combusting more than one fuel in the dryer/mixer burner, the Permittee shall limit fuel usage according to the following equation:

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

where:

- N = tons of nitrogen oxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 distillate fuel oil used in last 12 months
- F = gallons of No. 4 distillate fuel oil used in last 12 months
- B = gallons of biodiesel used in last 12 months
- W = gallons of re-refined waste oil used in last 12 months
- E_G = 190 lb/million cubic feet of natural gas
- E_O = 24 lb/1000 gallons of No. 2 distillate fuel oil
- E_F = 47 lb/1000 gallons of No. 4 distillate fuel oil
- E_B = 26.4 lb/1000 gallons of biodiesel
- E_W = 19 lb/1000 gallons of re-refined waste oil

Multiple Fuel Usage

FESOP Quarterly Report

QUARTER: _____ YEAR: _____

Month	Fuel Types (units)	Column 1	Column 2		Column 1 + Column 2	Equation Results	
		Usage This Month	Usage Previous 11 Months		Usage 12 Month Total	Sulfur Dioxide (SO2) Emissions (tons per 12 months)	Nitrogen Oxides (NOx) Emissions (tons per 12 months)
Month 1	Natural Gas (million cubic feet)			G			
	No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)			O			
	No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)			R			
	Biodiesel ≤ 0.5 wt% sulfur (gallons)			B			
	Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)			U			
Month 2	Natural Gas (million cubic feet)			G			
	No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)			O			
	No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)			R			
	Biodiesel ≤ 0.5 wt% sulfur (gallons)			B			
	Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)			U			
Month 3	Natural Gas (million cubic feet)			G			
	No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)			O			
	No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)			R			
	Biodiesel ≤ 0.5 wt% sulfur (gallons)			B			
	Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)			U			

No deviation occurred in this reporting period. Submitted by: _____ Date: _____

Deviation/s occurred in this reporting period. Title / Position: _____ Phone: _____

Deviation has been reported on: _____ Signature: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc.
 Source Address: 12050 Optical Road, English, Indiana 47118
 Mailing Address: P.O. Box 5226, Evansville, Indiana 47716
 FESOP Permit No.: F123-28142-00025
 Facility: Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles

Parameter: Single Liquid Binder Solvent Usage / VOC Emissions

Limit: Volatile Organic Compound (VOC) emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period. When using only one type of binder, the total VOC solvent usage shall be limited as follows:

Type of Binder	Binder VOC Limits (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	72.51
Cutback Asphalt Medium Cure	98.41
Cutback Asphalt Slow Cure	275.56
Emulsified Asphalt	148.47
Other Asphalt	2,755.56

QUARTER: _____ YEAR: _____

The following liquid binder solvent was the only liquid binder solvent used over the previous 12 month period: _____
 Limit applicable: _____

(use of more than one binder requires the use of the "Multiple Liquid Binder Solvents" report form)

Month	Column 1	Column 2	Column 1 + Column 2
	Liquid Binder Usage This Month (tons)	Liquid Binder Usage Previous 11 Months (tons)	Liquid Binder Usage 12 Month Total (tons)
Month 1			
Month 2			
Month 3			

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

Submitted by: _____ Date: _____

Title / Position: _____ Phone: _____

Signature: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report
Page 1 of 2

Source Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: P.O. Box 5226, Evansville, Indiana 47716
FESOP Permit No.: F123-28142-00025
Facility: Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles

Parameter: Multiple Liquid Binder Solvent Usage / VOC Emissions

Limit: Volatile Organic Compound (VOC) emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period. When using more than one type of binder, the Permittee shall limit VOC solvent usage as follows:

Type of Binder	Binder VOC Limits (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	72.51
Cutback Asphalt Medium Cure	98.41
Cutback Asphalt Slow Cure	275.56
Emulsified Asphalt	148.47
Other Asphalt	2,755.56

The tons of VOC emitted per each type of binder, shall be determined using the following equation:

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

Where:

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

Multiple Liquid Binder Solvent Usage

FESOP Quarterly Report

QUARTER: _____ YEAR: _____

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

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

Attach a signed certification to complete this report.

**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: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025

Months: _____ to _____ Year: _____

Page 1 of 2

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

Attach a signed certification to complete this report.

**Federally Enforceable State Operating
Permit (FESOP) Renewal
OFFICE OF AIR QUALITY**

**J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118**

Attachment A

**HOT-MIX ASPHALT PLANT
FUGITIVE DUST CONTROL PLAN**

F123-28142-00025

HOT-MIX ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN

- (a) Fugitive particulate matter emissions from paved roads, unpaved roads, and parking lots shall be controlled by one or more of the following methods:
 - (1) Application of water and/or water-dust control material solutions;
 - (2) Sweeping between watering;
 - (3) Limiting vehicular speed to 10 miles per hour.
- (b) Fugitive particulate matter emissions from conveying/handling operations shall be controlled by minimizing all drop distances.
- (c) Fugitive particulate matter emissions from storage piles shall be controlled by one of the following methods:
 - (1) minimizing drop distances; and
 - (2) maintaining moisture content of materials above 1.5%.

**Federally Enforceable State Operating
Permit (FESOP) Renewal
OFFICE OF AIR QUALITY**

**J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118**

Attachment B

Title 40: Protection of Environment

PART 60—NEW SOURCE PERFORMANCE STANDARDS

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

F123-28142-00025

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

§ 60.90 Applicability and designation of affected facility.

- (a) The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.
- (b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

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

§ 60.91 Definitions.

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

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

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

- (a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:
 - (1) Contain particulate matter in excess of 90 mg/dscm (four hundredths (0.04) gr/dscf).
 - (2) Exhibit 20 percent opacity, or greater.

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

§ 60.93 Test methods and procedures.

- (a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).
- (b) The owner or operator shall determine compliance with the particulate matter standards in §60.92 as follows:
 - (1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).
 - (2) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989]

Reference

The US EPA Electronic Code of Federal Regulations - 40 CFR 60, Subpart I: Standards of Performance for Hot Mix Asphalt Facilities weblink:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=875648a88dd2168ac2096fe26e3e4c98&rqn=div6&view=text&node=40:6.0.1.1.1.20&idno=40>

**Federally Enforceable State Operating
Permit (FESOP) Renewal
OFFICE OF AIR QUALITY**

**J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118**

Attachment C

Title 40: Protection of Environment

[PART 60—NEW SOURCE PERFORMANCE STANDARDS](#)

**Subpart 000 - STANDARDS OF PERFORMANCE
FOR NONMETALLIC MINERAL PROCESSING PLANTS**

F123-28142-00025

40 CFR 60, SUBPART 000—STANDARDS OF PERFORMANCE FOR NONMETALLIC MINERAL PROCESSING PLANTS

Source: 51 FR 31337, Aug. 1, 1985, unless otherwise noted.

§ 60.670 Applicability and designation of affected facility.

- (a) (1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.
- (2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; and stand-alone screening operations at plants without crushers or grinding mills.
- (b) An affected facility that is subject to the provisions of subpart F or I or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.
- (c) Facilities at the following plants are not subject to the provisions of this subpart:
 - (1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 23 megagrams per hour (25 tons per hour) or less;
 - (2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 136 megagrams per hour (150 tons per hour) or less; and
 - (3) Common clay plants and pumice plants with capacities, as defined in §60.671, of 9 megagrams per hour (10 tons per hour) or less.
- (d) (1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in §60.671, having the same function as the existing facility, the new facility is exempt from the provisions of §§60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.
- (2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in §60.676(a).
- (3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§60.672, 60.674 and 60.675.
- (e) An affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this part.
- (f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that apply and those that do not apply to owners and operators of affected facilities subject to this subpart.

Table 1—Applicability of Subpart A to Subpart OOO

Subpart A reference	Applies to Subpart OOO	Comment
60.1, Applicability	Yes	
60.2, Definitions	Yes	
60.3, Units and abbreviations	Yes	
60.4, Address:		
(a)	Yes	
(b)	Yes	
60.5, Determination of construction or modification	Yes	
60.6, Review of plans	Yes	
60.7, Notification and recordkeeping	Yes	Except in (a)(2) report of anticipated date of initial startup is not required (§60.676(h)).
60.8, Performance tests	Yes	Except in (d), after 30 days notice for an initially scheduled performance test, any rescheduled performance test requires 7 days notice, not 30 days (§60.675(g)).
60.9, Availability of information	Yes	
60.10, State authority	Yes	
60.11, Compliance with standards and maintenance requirements	Yes	Except in (b) under certain conditions (§§60.675 (c)(3) and (c)(4)), Method 9 observation may be reduced from 3 hours to 1 hour. Some affected facilities exempted from Method 9 tests (§60.675(h)).
60.12, Circumvention	Yes	
60.13, Monitoring requirements	Yes	
60.14, Modification	Yes	
60.15, Reconstruction	Yes	
60.16, Priority list	Yes	
60.17, Incorporations by reference	Yes	
60.18, General control device	No	Flares will not be used to comply with the emission limits.
60.19, General notification and reporting requirements	Yes	

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997]

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§ 60.671 Definitions.

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

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

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

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

Building means any frame structure with a roof.

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

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

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

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

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

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

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

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

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

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

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

- (a) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.
- (b) Sand and Gravel.

- (c) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.
- (d) Rock Salt.
- (e) Gypsum.
- (f) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.
- (g) Pumice.
- (h) Gilsonite.
- (i) Talc and Pyrophyllite.
- (j) Boron, including Borax, Kernite, and Colemanite.
- (k) Barite.
- (l) Fluorospar.
- (m) Feldspar.
- (n) Diatomite.
- (o) Perlite.
- (p) Vermiculite.
- (q) Mica.
- (r) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

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

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

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

Screening operation means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

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

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

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

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

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

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

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

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

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997]

§ 60.672 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 cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:
 - (1) Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and
 - (2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber must comply with the reporting provisions of §60.676 (c), (d), and (e).
- (b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d), and (e) of this section.
- (c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.
- (d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.
- (e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a), (b) and (c) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:

- (1) No owner or operator shall cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions except emissions from a vent as defined in §60.671.
- (2) No owner or operator shall cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions which exceed the stack emissions limits in paragraph (a) of this section.
- (f) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any baghouse that controls emissions from only an individual, enclosed storage bin, stack emissions which exhibit greater than 7 percent opacity.
- (g) Owners or operators of multiple storage bins with combined stack emissions shall comply with the emission limits in paragraph (a)(1) and (a)(2) of this section.
- (h) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator shall cause to be discharged into the atmosphere any visible emissions from:
 - (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill or storage bin.
 - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such screening operations, bucket elevators, and belt conveyors process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997; 65 FR 61778, Oct. 17, 2000]

§ 60.673 Reconstruction.

- (a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital cost that would be required to construct a comparable new facility” under §60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.
- (b) Under §60.15, the “fixed capital cost of the new components” includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

§ 60.674 Monitoring of operations.

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

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

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

§ 60.675 Test methods and procedures.

- (a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.
- (b) The owner or operator shall determine compliance with the particulate matter standards in §60.672(a) as follows:
- (1) Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.
 - (2) Method 9 and the procedures in §60.11 shall be used to determine opacity.
- (c) (1) In determining compliance with the particulate matter standards in §60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in §60.11, with the following additions:
- (i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).
 - (ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.
 - (iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.
- (2) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under §60.672(f) of this subpart, using Method 9, the duration of the Method 9 observations shall be 1 hour (ten 6-minute averages).
- (3) When determining compliance with the fugitive emissions standard for any affected facility described under §60.672(b) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
- (i) There are no individual readings greater than 10 percent opacity; and
 - (ii) There are no more than 3 readings of 10 percent for the 1-hour period.

- (4) When determining compliance with the fugitive emissions standard for any crusher at which a capture system is not used as described under §60.672(c) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
 - (i) There are no individual readings greater than 15 percent opacity; and
 - (ii) There are no more than 3 readings of 15 percent for the 1-hour period.
- (d) In determining compliance with §60.672(e), the owner or operator shall use Method 22 to determine fugitive emissions. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test for each building shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes.
- (e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:
 - (1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:
 - (i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.
 - (ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.
- (f) To comply with §60.676(d), the owner or operator shall record the measurements as required in §60.676(c) using the monitoring devices in §60.674 (a) and (b) during each particulate matter run and shall determine the averages.
- (g) If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting any rescheduled performance test required in this section, the owner or operator of an affected facility shall submit a notice to the Administrator at least 7 days prior to any rescheduled performance test.
- (h) Initial Method 9 performance tests under §60.11 of this part and §60.675 of this subpart are not required for:
 - (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to, but not including the next crusher, grinding mill, or storage bin.
 - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, that process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

[54 FR 6680, Feb. 14, 1989, as amended at 62 FR 31360, June 9, 1997]

§ 60.676 Reporting and recordkeeping.

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

- (1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:
 - (i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and
 - (ii) The rated capacity in tons per hour of the replacement equipment.
- (2) For a screening operation:
 - (i) The total surface area of the top screen of the existing screening operation being replaced and
 - (ii) The total surface area of the top screen of the replacement screening operation.
- (3) For a conveyor belt:
 - (i) The width of the existing belt being replaced and
 - (ii) The width of the replacement conveyor belt.
- (4) For a storage bin:
 - (i) The rated capacity in megagrams or tons of the existing storage bin being replaced and
 - (ii) The rated capacity in megagrams or tons of replacement storage bins.
- (b) [Reserved]
- (c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.
- (d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than ± 30 percent from the averaged determined during the most recent performance test.
- (e) The reports required under paragraph (d) shall be postmarked within 30 days following end of the second and fourth calendar quarters.
- (f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in §60.672 of this subpart, including reports of opacity observations made using Method 9 to demonstrate compliance with §60.672(b), (c), and (f), and reports of observations using Method 22 to demonstrate compliance with §60.672(e).
- (g) The owner or operator of any screening operation, bucket elevator, or belt conveyor that processes saturated material and is subject to §60.672(h) and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the 10 percent opacity limit in §60.672(b) and the emission test requirements of §60.11 and this subpart. Likewise, a screening operation, bucket elevator, or belt conveyor that processes unsaturated material but subsequently processes saturated material shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the no visible emission limit in §60.672(h).

- (h) The subpart A requirement under §60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart.
- (i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.
 - (1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.
 - (2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.
- (j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

[51 FR 31337, Aug. 1, 1985, as amended at 54 FR 6680, Feb. 14, 1989; 62 FR 31360, June 9, 1997; 65 FR 61778, Oct. 17, 2000]

Reference:

The US EPA Electronic Code of Federal Regulations - 40 CFR 60, Subpart OOO—Standards Of Performance For Nonmetallic Mineral Processing Plants weblink:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=43918166a5e8fa1b77b615cd0efc6c39&rqn=div6&view=text&node=40:6.0.1.1.1.80&idno=40>

**Federally Enforceable State Operating
Permit (FESOP) Renewal
OFFICE OF AIR QUALITY**

**J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118**

Attachment D

Title 40: Protection of Environment

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

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

F123-28142-00025

40 CFR 63, Subpart CCCCC - National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

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

What This Subpart Covers

§ 63.11110 What is the purpose of this subpart?

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

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

- (a) The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank.
- (b) If your GDF has a monthly throughput of less than 10,000 gallons of gasoline, you must comply with the requirements in §63.11116.
- (c) If your GDF has a monthly throughput of 10,000 gallons of gasoline or more, you must comply with the requirements in §63.11117.
- (d) If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in §63.11118.
- (e) An affected source shall, upon request by the Administrator, demonstrate that their average monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable.
- (f) If you are an owner or operator of affected sources, as defined in paragraph (a) of this section, you are not required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 as a result of being subject to this subpart. However, you must still apply for and obtain a permit under 40 CFR part 70 or 40 CFR part 71 if you meet one or more of the applicability criteria found in 40 CFR 70.3(a) and (b) or 40 CFR 71.3(a) and (b).
- (g) The loading of aviation gasoline storage tanks at airports is not subject to this subpart and the aviation gasoline is not included in the gasoline throughput specified in paragraphs (b) through (e) of this section.

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

- (a) The emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF that meet the criteria specified in §63.11111. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.
- (b) An affected source is a new affected source if you commenced construction on the affected source after November 9, 2006, and you meet the applicability criteria in §63.11111 at the time you commenced operation.

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

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

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

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

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

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

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

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

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

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

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

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008]

Emission Limitations and Management Practices

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

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

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

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

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

(b) You are not required to submit notifications or reports, but you must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

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

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

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

(b) Except as specified in paragraph (c), you must only load gasoline into storage tanks at your facility by utilizing submerged filling, as defined in §63.11132, and as specified in paragraph (b)(1) or paragraph (b)(2) of this section.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Testing and Monitoring Requirements

§ 63.11120 What testing and monitoring requirements must I meet?

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

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

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

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

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

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

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

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

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

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

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

Notifications, Records, and Reports

§ 63.11124 What notifications must I submit and when?

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

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in §63.11117, unless you meet the requirements in paragraph (a)(3) of this section. The Initial Notification must contain the information specified in paragraphs (a)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in §63.13.

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

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

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

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in §63.13, by the compliance date specified in §63.11113 unless you meet the requirements in paragraph (a)(3) of this section. The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy and must indicate whether the source has complied with the requirements of this subpart. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (a)(1) of this section is due, the

Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (a)(1) of this section.

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

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

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in §63.11118. The Initial Notification must contain the information specified in paragraphs (b)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and the delegated State authority as specified in §63.13.

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

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

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

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in §63.13, by the compliance date specified in §63.11113. The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy and must indicate whether the source has complied with the requirements of this subpart. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (b)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (b)(1) of this section.

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

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

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

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

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

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

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

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

§ 63.11125 What are my recordkeeping requirements?

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

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

§ 63.11126 What are my reporting requirements?

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

Other Requirements and Information

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

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

§ 63.11131 Who implements and enforces this subpart?

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

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

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

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

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

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

§ 63.11132 What definitions apply to this subpart?

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

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

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

Gasoline dispensing facility (GDF) means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle.

Monthly throughput means the total volume of gasoline that is loaded into all gasoline storage tanks during a month, as calculated on a rolling 30-day average.

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

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

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

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

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

If you own or operate	Then you must
	$Pf = 2e^{-500.887/v}$
	Where:
	Pf = Minimum allowable final pressure, inches of water.
	v = Total ullage affected by the test, gallons.
	e = Dimensionless constant equal to approximately 2.718.
	2 = The initial pressure, inches water.
2. For new or reconstructed GDF, or new storage tank(s) at an existing affected facility subject to §63.11118	Equip your gasoline storage tanks with a dual-point vapor balance system, as defined in §63.11132, and comply with the requirements of item 1 in this Table.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008]

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

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

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Table 3 to Subpart CCCCC of Part 63—Applicability of General Provisions

Citation	Subject	Brief description	Applies to subpart CCCCC
§63.1	Applicability	Initial applicability determination; applicability after standard established; permit requirements; extensions, notifications	Yes, specific requirements given in §63.11111.
§63.1(c)(2)	Title V Permit	Requirements for obtaining a title V permit from the applicable permitting authority	Yes, §63.11111(f) of subpart CCCCC exempts identified area sources from the obligation to obtain title V operating permits.
§63.2	Definitions	Definitions for part 63 standards	Yes, additional definitions in §63.11132.
§63.3	Units and Abbreviations	Units and abbreviations for part 63 standards	Yes.
§63.4	Prohibited Activities and Circumvention	Prohibited activities; Circumvention, severability	Yes.
§63.5	Construction/Reconstruction	Applicability; applications; approvals	Yes.
§63.6(a)	Compliance with Standards/Operation & Maintenance—Applicability	General Provisions apply unless compliance extension; General Provisions apply to area sources that become major	Yes.
§63.6(b)(1)–(4)	Compliance Dates for New and Reconstructed Sources	Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for CAA section 112(f)	Yes.
§63.6(b)(5)	Notification	Must notify if commenced construction or reconstruction after proposal	Yes.
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources That Become Major	Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were an area source	No.
§63.6(c)(1)–(2)	Compliance Dates for Existing Sources	Comply according to date in this subpart, which must be no later than 3 years after effective date; for CAA section 112(f) standards, comply within 90 days of effective date unless compliance extension	No, §63.11113 specifies the compliance dates.
§63.6(c)(3)–(4)	[Reserved]		
§63.6(c)(5)	Compliance Dates for Existing Area Sources That Become Major	Area sources That become major must comply with major source standards by date indicated in this subpart or by equivalent time period (e.g., 3 years)	No.
§63.6(d)	[Reserved]		
§63.6(e)(1)	Operation & Maintenance	Operate to minimize emissions at	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
		all times; correct malfunctions as soon as practicable; and operation and maintenance requirements independently enforceable; information Administrator will use to determine if operation and maintenance requirements were met	
§63.6(e)(2)	[Reserved]		
§63.6(e)(3)	Startup, Shutdown, and Malfunction (SSM) Plan	Requirement for SSM plan; content of SSM plan; actions during SSM	No.
§63.6(f)(1)	Compliance Except During SSM	You must comply with emission standards at all times except during SSM	No.
§63.6(f)(2)–(3)	Methods for Determining Compliance	Compliance based on performance test, operation and maintenance plans, records, inspection	Yes.
§63.6(g)(1)–(3)	Alternative Standard	Procedures for getting an alternative standard	Yes.
§63.6(h)(1)	Compliance with Opacity/Visible Emission (VE) Standards	You must comply with opacity/VE standards at all times except during SSM	No.
§63.6(h)(2)(i)	Determining Compliance with Opacity/VE Standards	If standard does not State test method, use EPA Method 9 for opacity in appendix A of part 60 of this chapter and EPA Method 22 for VE in appendix A of part 60 of this chapter	No.
§63.6(h)(2)(ii)	[Reserved]		
§63.6(h)(2)(iii)	Using Previous Tests To Demonstrate Compliance With Opacity/VE Standards	Criteria for when previous opacity/VE testing can be used to show compliance with this subpart	No.
§63.6(h)(3)	[Reserved]		
§63.6(h)(4)	Notification of Opacity/VE Observation Date	Must notify Administrator of anticipated date of observation	No.
§63.6(h)(5)(i), (iii)–(v)	Conducting Opacity/VE Observations	Dates and schedule for conducting opacity/VE observations	No.
§63.6(h)(5)(ii)	Opacity Test Duration and Averaging Times	Must have at least 3 hours of observation with 30 6-minute averages	No.
§63.6(h)(6)	Records of Conditions During Opacity/VE Observations	Must keep records available and allow Administrator to inspect	No.
§63.6(h)(7)(i)	Report Continuous Opacity Monitoring System (COMS) Monitoring Data From Performance Test	Must submit COMS data with other performance test data	No.
§63.6(h)(7)(ii)	Using COMS Instead of EPA Method 9	Can submit COMS data instead of EPA Method 9 results even if rule requires EPA Method 9 in appendix A of part 60 of this chapter, but must notify Administrator before performance test	No.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§63.6(h)(7)(iii)	Averaging Time for COMS During Performance Test	To determine compliance, must reduce COMS data to 6-minute averages	No.
§63.6(h)(7)(iv)	COMS Requirements	Owner/operator must demonstrate that COMS performance evaluations are conducted according to §63.8(e); COMS are properly maintained and operated according to §63.8(c) and data quality as §63.8(d)	No.
§63.6(h)(7)(v)	Determining Compliance with Opacity/VE Standards	COMS is probable but not conclusive evidence of compliance with opacity standard, even if EPA Method 9 observation shows otherwise. Requirements for COMS to be probable evidence-proper maintenance, meeting Performance Specification 1 in appendix B of part 60 of this chapter, and data have not been altered	No.
§63.6(h)(8)	Determining Compliance with Opacity/VE Standards	Administrator will use all COMS, EPA Method 9 (in appendix A of part 60 of this chapter), and EPA Method 22 (in appendix A of part 60 of this chapter) results, as well as information about operation and maintenance to determine compliance	No.
§63.6(h)(9)	Adjusted Opacity Standard	Procedures for Administrator to adjust an opacity standard	No.
§63.6(i)(1)–(14)	Compliance Extension	Procedures and criteria for Administrator to grant compliance extension	Yes.
§63.6(j)	Presidential Compliance Exemption	President may exempt any source from requirement to comply with this subpart	Yes.
§63.7(a)(2)	Performance Test Dates	Dates for conducting initial performance testing; must conduct 180 days after compliance date	Yes.
§63.7(a)(3)	CAA Section 114 Authority	Administrator may require a performance test under CAA section 114 at any time	Yes.
§63.7(b)(1)	Notification of Performance Test	Must notify Administrator 60 days before the test	Yes.
§63.7(b)(2)	Notification of Re-scheduling	If have to reschedule performance test, must notify Administrator of rescheduled date as soon as practicable and without delay	Yes.
§63.7(c)	Quality Assurance (QA)/Test Plan	Requirement to submit site-specific test plan 60 days before the test or on date Administrator agrees with; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing	Yes.
§63.7(d)	Testing Facilities	Requirements for testing facilities	Yes.
§63.7(e)(1)	Conditions for Conducting Performance Tests	Performance tests must be conducted under representative conditions; cannot conduct performance tests during SSM	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§63.7(e)(2)	Conditions for Conducting Performance Tests	Must conduct according to this subpart and EPA test methods unless Administrator approves alternative	Yes.
§63.7(e)(3)	Test Run Duration	Must have three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used	Yes.
§63.7(f)	Alternative Test Method	Procedures by which Administrator can grant approval to use an intermediate or major change, or alternative to a test method	Yes.
§63.7(g)	Performance Test Data Analysis	Must include raw data in performance test report; must submit performance test data 60 days after end of test with the Notification of Compliance Status; keep data for 5 years	Yes.
§63.7(h)	Waiver of Tests	Procedures for Administrator to waive performance test	Yes.
§63.8(a)(1)	Applicability of Monitoring Requirements	Subject to all monitoring requirements in standard	Yes.
§63.8(a)(2)	Performance Specifications	Performance Specifications in appendix B of 40 CFR part 60 apply	Yes.
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring of Flares	Monitoring requirements for flares in §63.11 apply	Yes.
§63.8(b)(1)	Monitoring	Must conduct monitoring according to standard unless Administrator approves alternative	Yes.
§63.8(b)(2)–(3)	Multiple Effluents and Multiple Monitoring Systems	Specific requirements for installing monitoring systems; must install on each affected source or after combined with another affected source before it is released to the atmosphere provided the monitoring is sufficient to demonstrate compliance with the standard; if more than one monitoring system on an emission point, must report all monitoring system results, unless one monitoring system is a backup	No.
§63.8(c)(1)	Monitoring System Operation and Maintenance	Maintain monitoring system in a manner consistent with good air pollution control practices	No.
§63.8(c)(1)(i)–(iii)	Routine and Predictable SSM	Follow the SSM plan for routine repairs; keep parts for routine repairs readily available; reporting requirements for SSM when action is described in SSM plan	No.
§63.8(c)(2)–(8)	Continuous Monitoring System (CMS) Requirements	Must install to get representative emission or parameter measurements; must verify operational status before or at performance test	No.
§63.8(d)	CMS Quality Control	Requirements for CMS quality control,	No.

Citation	Subject	Brief description	Applies to subpart CCCCCC
		including calibration, etc.; must keep quality control plan on record for 5 years; keep old versions for 5 years after revisions	
§63.8(e)	CMS Performance Evaluation	Notification, performance evaluation test plan, reports	No.
§63.8(f)(1)–(5)	Alternative Monitoring Method	Procedures for Administrator to approve alternative monitoring	No.
§63.8(f)(6)	Alternative to Relative Accuracy Test	Procedures for Administrator to approve alternative relative accuracy tests for continuous emissions monitoring system (CEMS)	No.
§63.8(g)	Data Reduction	COMS 6-minute averages calculated over at least 36 evenly spaced data points; CEMS 1 hour averages computed over at least 4 equally spaced data points; data that cannot be used in average	No.
§63.9(a)	Notification Requirements	Applicability and State delegation	Yes.
§63.9(b)(1)–(2), (4)–(5)	Initial Notifications	Submit notification within 120 days after effective date; notification of intent to construct/reconstruct, notification of commencement of construction/reconstruction, notification of startup; contents of each	Yes.
§63.9(c)	Request for Compliance Extension	Can request if cannot comply by date or if installed best available control technology or lowest achievable emission rate	Yes.
§63.9(d)	Notification of Special Compliance Requirements for New Sources	For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date	Yes.
§63.9(e)	Notification of Performance Test	Notify Administrator 60 days prior	Yes.
§63.9(f)	Notification of VE/Opaicity Test	Notify Administrator 30 days prior	No.
§63.9(g)	Additional Notifications when Using CMS	Notification of performance evaluation; notification about use of COMS data; notification that exceeded criterion for relative accuracy alternative	Yes, however, there are no opacity standards.
§63.9(h)(1)–(6)	Notification of Compliance Status	Contents due 60 days after end of performance test or other compliance demonstration, except for opacity/VE, which are due 30 days after; when to submit to Federal vs. State authority	Yes, however, there are no opacity standards.
§63.9(i)	Adjustment of Submittal Deadlines	Procedures for Administrator to approve change when notifications must be submitted	Yes.
§63.9(j)	Change in Previous Information	Must submit within 15 days after the change	Yes.
§63.10(a)	Recordkeeping/Reporting	Applies to all, unless compliance extension; when to submit to Federal vs. State authority; procedures for owners of more than one source	Yes.
§63.10(b)(1)	Recordkeeping/Reporting	General requirements; keep all records	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
		readily available; keep for 5 years	
§63.10(b)(2)(i)–(iv)	Records Related to SSM	Occurrence of each for operations (process equipment); occurrence of each malfunction of air pollution control equipment; maintenance on air pollution control equipment; actions during SSM	No.
§63.10(b)(2)(vi)–(xi)	CMS Records	Malfunctions, inoperative, out-of-control periods	No.
§63.10(b)(2)(xii)	Records	Records when under waiver	Yes.
§63.10(b)(2)(xiii)	Records	Records when using alternative to relative accuracy test	Yes.
§63.10(b)(2)(xiv)	Records	All documentation supporting Initial Notification and Notification of Compliance Status	Yes.
§63.10(b)(3)	Records	Applicability determinations	Yes.
§63.10(c)	Records	Additional records for CMS	No.
§63.10(d)(1)	General Reporting Requirements	Requirement to report	Yes.
§63.10(d)(2)	Report of Performance Test Results	When to submit to Federal or State authority	Yes.
§63.10(d)(3)	Reporting Opacity or VE Observations	What to report and when	No.
§63.10(d)(4)	Progress Reports	Must submit progress reports on schedule if under compliance extension	Yes.
§63.10(d)(5)	SSM Reports	Contents and submission	Yes.
§63.10(e)(1)–(2)	Additional CMS Reports	Must report results for each CEMS on a unit; written copy of CMS performance evaluation; two-three copies of COMS performance evaluation	No.
§63.10(e)(3)(i)–(iii)	Reports	Schedule for reporting excess emissions	Yes, note that §63.11130(K) specifies excess emission events for this subpart.
§63.10(e)(3)(iv)–(v)	Excess Emissions Reports	Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§63.8(c)(7)–(8) and 63.10(c)(5)–(13)	No, §63.11130(K) specifies excess emission events for this subpart.

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

Resource

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

Reference

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

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

Addendum to the Technical Support Document (ATSD) for a
Federally Enforceable State Operating Permit Renewal

Source Background and Description

Source Name: J.H. Rudolph & Company, Inc.
Source Location: 12050 Optical Road, English, Indiana 47118
County: Perry
SIC Code: 2951
Permit Renewal No.: F123-28142-00025
Permit Reviewer: Hannah L. Desrosiers

On December 14, 2009, the Office of Air Quality (OAQ) had a notice published in Perry County News in Tell City, Indiana, stating that J.H. Rudolph & Company, Inc. had applied for a Federally Enforceable State Operating Permit (FESOP) Renewal. The notice also stated that the OAQ proposed to issue a FESOP Renewal for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

On Thursday, January 14, 2010, Christopher J. Zirkelbach, of Environmental & Safety Solutions, Inc., consultant for J.H. Rudolph & Company, Inc., submitted comments to IDEM, OAQ on the draft FESOP Renewal.

The Technical Support Documentation (including the TSD and TSD Appendices A.1 and A.2) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original Technical Support Documentation, but the Permit will have the updated changes. The comments and revised permit language are provided below, and in ATSD Appendix A, with deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1:

J.H. Rudolph & Company, Inc. would like to be able to use steel slag in their aggregate mix. They are willing to adjust their fuel usage limits to accommodate this addition.

Response to Comment 1:

IDEM agrees with the recommended changes, since the addition of steel slag has a very small impact upon the SO₂ emissions from this source and because the limits will be revised to accommodate the addition. See ATSD Appendix A for the detailed calculations.

The permit has been revised as follows:

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

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

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, **processing steel slag in the aggregate mix**, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, and No. 4 distillate fuel oil as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1;

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and consisting of the following:
 - (1) **Aggregate storage piles consisting of sand, gravel, and steel slag, as follows;**
 - (A) **Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres**
 - (B) **Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres**
 - (C) **Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres**
 - (24) Four (4) aggregate conveyors;
 - (32) One (1) scalping screen;
 - (43) Six (6) cold feed bins;
- ***
- (c) One (1) recycled asphalt pavement (RAP) system, constructed in 2005, with a maximum throughput capacity of one hundred (100) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:
 - (5) **RAP storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres**
- ***

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

<p>Emissions Unit Description: Drum, hot-mix asphalt plant</p> <ul style="list-style-type: none">(a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, and No. 4 distillate fuel oil as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1;***(b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and consisting of the following:<ul style="list-style-type: none">(1) Aggregate storage piles consisting of sand, gravel, and steel slag, as follows;<ul style="list-style-type: none">(A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres(B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres(C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres(24) Four (4) aggregate conveyors;(32) One (1) scalping screen;

<p>(43) Six (6) cold feed bins; ***</p> <p>(c) One (1) recycled asphalt pavement (RAP) system, constructed in 2005, with a maximum throughput capacity of one hundred (100) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following: ***</p> <p>(5) RAP storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres ***</p>
--

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

D.1.1 PSD Limits [326 IAC 2-2]

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

- (b) The PM emissions from the dryer/mixer shall not exceed eight hundred ~~seventy-nine~~ **fifty-eight** thousandths (~~0.8580-879~~) pounds of PM per ton of asphalt produced.

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

Pursuant to 326 IAC 2-8-4 (FESOP), the amount of slag used in the production of asphalt shall not exceed three hundred seventy-five thousand (375,000) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall not use slag as an aggregate additive in its hot mix asphalt operations.

Compliance with this limit, combined with the potential SO₂ emissions from all other emission units at this source, shall limit the source-wide total potential to emit SO₂ to less than one hundred (100) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

D.1.3 FESOP Limits [326 IAC 2-8-4] [326 IAC 8-1-6] [326 IAC 2-2]

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

- (b) PM₁₀ emissions from the dryer/mixer shall not exceed three hundred ~~thirty-five~~ **forty-five** thousandths (~~0.3450-359~~) pounds of PM₁₀ per ton of asphalt produced.

- (c) PM_{2.5} emissions from the dryer/mixer shall not exceed three hundred ~~seventy-eight~~ **sixty-four** thousandths (~~0.3640-378~~) pounds of PM_{2.5} per ton of asphalt produced.

D.2.1 Volatile Organic Compounds (VOC) [326 IAC 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the VOC emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed **sixty-eight and eighty-nine hundredths** ~~sixty-seven and eighty-eight hundredths~~ (~~68.8967-88~~) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. This shall be achieved by limiting the total VOC solvent usage in of any one of the selected binders as follows:

When more than one binder is used, the formula in subsection (f) must be applied so that the total VOC emissions do not **exceed sixty-eight and eighty-nine hundredths** ~~sixty-seven and eighty-eight hundredths~~ (~~68.8967-88~~) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (a) Cut back asphalt rapid cure, containing a maximum of twenty-five and three tenths percent (25.3%) of the liquid binder by weight of VOC solvent and ninety-five percent (95%) by weight of VOC solvent evaporating.

Cutback asphalt rapid cure liquid binder usage shall not exceed **seventy-two and fifty-one hundredths** ~~seventy-one and forty-six hundredths (72.5171.46)~~ tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (b) Cut back asphalt medium cure, containing a maximum of twenty-eight and six tenths percent (28.6%) of the liquid binder by weight of VOC solvent and seventy percent (70%) by weight of VOC solvent evaporating.

Cutback asphalt medium cure liquid binder usage shall not exceed **ninety-eight and forty-one hundredths** ~~ninety-six and seventy-eight hundredths (98.4196.98)~~ tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (c) Cut back asphalt slow cure, containing a maximum of twenty percent (20%) of the liquid binder by weight of VOC solvent and twenty-five percent (25%) by weight of VOC solvent evaporating.

Cutback asphalt slow cure liquid binder usage shall not exceed **two hundred seventy-five and fifty-six hundredths** ~~two hundred seventy-one and fifty-three hundredths (275.56271.53)~~ tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (d) Emulsified asphalt with solvent, containing a maximum of fifteen percent (15%) of liquid binder by weight of VOC solvent and forty-six and four tenths percent (46.4%) by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume

Emulsified asphalt with solvent liquid binder usage shall not exceed **one hundred and forty-eight and forty-seven hundredths** ~~one hundred forty-six and thirty hundredths (148.47146.30)~~ tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (e) Other asphalt with solvent binder, containing a maximum twenty-five and nine tenths percent (25.9%) of the liquid binder of VOC solvent and two and five tenths percent (2.5%) by weight of the VOC solvent evaporating.

Other asphalt with solvent liquid binder shall not exceed **two thousand seven hundred fifty-five and fifty-six hundredths** ~~two thousand seven hundred fifteen and thirty-one hundredths (2,755.562,715.31)~~ tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

SECTION E.1

NSPS REQUIREMENTS

Emissions Unit Description: Drum, hot-mix asphalt plant

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, **processing steel slag in the aggregate mix**, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, and No. 4 distillate fuel oil as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1;

(b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and consisting of the following:

(1) Aggregate storage piles consisting of sand, gravel, and steel slag, as follows;

(A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(2) Four (4) aggregate conveyors;

(3) One (1) scalping screen;

(4) Six (6) cold feed bins;

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

SECTION E.2

NSPS REQUIREMENTS

Emissions Unit Description: Recycled Asphalt Pavement (RAP) System

(c) One (1) recycled asphalt pavement (RAP) system, constructed in 2005, with a maximum throughput capacity of one hundred (100) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:

(5) RAP storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner
Parameter: Steel Slag Usage
Limit: Maximum steel slag usage shall not exceed 375,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ **YEAR:** _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
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: _____

Attach a signed certification to complete this report.

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE BRANCH

FESOP Quarterly Report

Parameter: Single Liquid Binder Solvent Usage / VOC Emissions

Limit: Volatile Organic Compound (VOC) emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed ~~sixty-eight and eighty-nine hundredths~~ ~~sixty-seven and eighty-eight hundredths~~ **(68.896788)** tons per twelve (12) consecutive month period. When using only one type of binder, the total VOC solvent usage shall be limited as follows:

Type of Binder	Binder VOC Limits (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	72.51 74.46
Cutback Asphalt Medium Cure	98.41 96.58
Cutback Asphalt Slow Cure	275.56 270.44
Emulsified Asphalt	148.47 145.70
Other Asphalt	2,755.56 2,704.14

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE BRANCH

FESOP Quarterly Report

Page 1 of 2

Parameter: Multiple Liquid Binder Solvent Usage / VOC Emissions

Limit: Volatile Organic Compound (VOC) emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed ~~sixty-eight and eighty-nine hundredths~~ ~~sixty-seven and eighty-eight hundredths~~ **(68.896788)** tons per twelve (12) consecutive month period. When using more than one type of binder, the Permittee shall limit VOC solvent usage as follows:

Type of Binder	Binder VOC Limits (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	72.51 74.46
Cutback Asphalt Medium Cure	98.41 96.58
Cutback Asphalt Slow Cure	275.56 270.44
Emulsified Asphalt	148.47 145.70
Other Asphalt	2,755.56 2,704.14

Comment 2:

J.H. Rudolph & Company, Inc. would like to be able to burn biodiesel in their combustion equipment; including, the dryer burner and hot oil heater. They are willing to adjust their fuel usage limits to accommodate this addition.

Response to Comment 2:

IDEM agrees with the recommended changes, since the addition of Biodiesel has a very little impact upon the emissions from this source and no adjustment to the source's limits are required to allow for the addition. See ATSD Appendix A for the detailed calculations.

The permit has been revised as follows:

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

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

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, and No. 4 distillate fuel oil, **and biodiesel** as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1;

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) liquid asphalt cement hot oil heating system, constructed in 2005, and consisting of the following:
 - (1) One (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, using No. 2 distillate fuel oil, No. 4 distillate fuel oil, and re-refined waste oil **and biodiesel** as backup fuels, uncontrolled and exhausting to one (1) stack, identified as EP2;

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Drum, hot-mix asphalt plant

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, and No. 4 distillate fuel oil, **and biodiesel** as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1;

D.1.4 Fuel Limitations [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to limit the SO₂, NO_x, HCl and combined HAP emissions from all emission units at this source, the Permittee shall comply with the following:

- (a) The sulfur content of the No. 2 and No. 4 distillate fuel oils, **and the biodiesel**, each, shall not exceed five-tenths percent (0.5%) by weight;

(g) Single Fuel Usage Limitations:

When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner the usage of fuel shall be limited as follows:

- (1) Re-refined waste oil usage shall not exceed **1,211,028** ~~1,283,020~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (2) Natural gas usage shall not exceed **1,009** ~~4028~~ million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (3) No. 2 distillate fuel oil usage shall not exceed **2,507,340** ~~2,656,394~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and
- (4) No. 4 distillate fuel oil usage shall not exceed **2,373,615** ~~2,514,719~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (5) **Biodiesel usage shall not exceed 2,507,340 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.**

D.1.5 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1][326 IAC 7-2-1]

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

- (a) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per million Btu heat input when using distillate oil (including the No. 2 **and No. 4** distillate fuel oils, **and biodiesel**).

D.1.12 Multiple Fuel Usage Limitation

In order to comply with Condition D.1.4(h) when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, the Permittee shall limit fuel usage in the dryer/mixer burner according to the following formulas:

- (a) Sulfur dioxide emission calculation

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

where:

S = tons of sulfur dioxide emissions for a 12-month consecutive period

G = million cubic feet of natural gas used in the last 12 months

O = gallons of No. 2 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur content

F = gallons of No. 4 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur

B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur

W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.0% sulfur

E_G = 0.60 lb/million cubic feet of natural gas

E_O = 71 pounds/1000 gallons of No. 2 distillate fuel oil

E_F = 75 pounds/1000 gallons of No. 4 distillate fuel oil

E_B = 71 pounds/1000 gallons of biodiesel

E_W = 147 lb/1000 gallons of re-refined waste oil

(b) Nitrogen oxide emission calculation

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

where:

N = tons of nitrogen oxide emissions for a 12-month consecutive period

G = million cubic feet of natural gas used in the last 12 months

O = gallons of No. 2 distillate fuel oil used in last 12 months

F = gallons of No. 4 distillate fuel oil used in last 12 months

B = gallons of biodiesel used in last 12 months

W = gallons of re-refined waste oil used in last 12 months

E_G = 190 lb/million cubic feet of natural gas

E_O = 24 lb/1000 gallons of No. 2 distillate fuel oil

E_F = 47 lb/1000 gallons of No. 4 distillate fuel oil

E_B = 26.4 lb/1000 gallons of biodiesel

E_W = 19 lb/1000 gallons of re-refined waste oil

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

D.1.16 Record Keeping Requirements [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-3][326 IAC 7-1.1-2]
[326 IAC 7-2-1]

- (b) To document compliance with Conditions D.1.4, and D.1.5, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken daily and shall be complete and sufficient to establish compliance with the SO₂, NO_x, HCl, and combined HAPs emission limits established in Conditions D.1.4 and D.1.5. For the annual fuel limits, the compliance determination period is the most recent twelve (12) consecutive month period. For the sulfur and HCl content limits, the compliance determination period is each calendar month.

If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:

- (7) A statement from the fuel supplier that certifies the sulfur content of No. 2 distillate fuel oil, No. 4 distillate fuel oil, **biodiesel**, and re-refined waste oil, and the chlorine, ash, and lead content of the re-refined waste oil.

SECTION D.3

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Insignificant Activities

- (a) One (1) liquid asphalt cement hot oil heating system, constructed in 2005, and consisting of the following:

- (1) One (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, using No. 2 distillate fuel oil, No. 4 distillate fuel oil, **biodiesel**, and re-refined waste oil as backup fuels, uncontrolled and exhausting to one (1) stack, identified as EP2;

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SECTION E.1 NSPS REQUIREMENTS

Emissions Unit Description: Hot-Mix Asphalt Plant

(a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, and No. 4 distillate fuel oil, **and biodiesel** as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1;

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
 Source Address: 12050 Optical Road, English, Indiana 47118
 Mailing Address: PO Box 5228, Evansville, IN 47716-5226
 FESOP Permit No.: F123-28142-00025
 Facility: Dryer/mixer burner
 Parameter: Single Fuel Usage

Limit: Sulfur Dioxide (SO₂) and Nitrogen Oxides (NO_x) emissions shall not exceed one hundred (100) tons per twelve (12) consecutive month period, each. Additionally, Hydrogen Chloride (HCl) emissions shall not exceed ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs shall not exceed twenty-five (25) tons per twelve (12) consecutive month period. When combusting only one type of fuel in the dryer/mixer burner, the usage of fuel shall be limited as follows:

Fuel Type (units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	1,009,4028
No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)	2,507,340 2,656,394
No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)	2,373,615 2,514,719
Biodiesel ≤ 0.5 wt% sulfur (gallons)	2,507,340
Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)	1,211,028 1,283,020

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Page 1 of 2

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
 Source Address: 12050 Optical Road, English, Indiana 47118
 Mailing Address: PO Box 5228, Evansville, IN 47716-5226
 FESOP Permit No.: F123-28142-00025
 Facility: Dryer/mixer burner

Parameters: Multiple Fuel Usage / Sulfur Dioxide (SO₂) & Nitrogen Oxides (NO_x) Emissions
Limit: Sulfur Dioxide (SO₂) emissions from the entire source shall not exceed one hundred (100) tons per twelve (12) consecutive month period. When combusting more than one fuel in the dryer/mixer burner, the Permittee shall limit fuel usage according to the following equation:

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

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur content
- F = gallons of No. 4 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur
- B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur**
- W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.0% sulfur
- E_G = 0.60 lb/million cubic feet of natural gas
- E_O = 71 pounds/1000 gallons of No. 2 distillate fuel oil
- E_F = 75 pounds/1000 gallons of No. 4 distillate fuel oil
- E_B = 71 pounds/1000 gallons of biodiesel**
- E_W = 147 lb/1000 gallons of re-refined waste oil

Limit: Nitrogen oxides (NO_x) emissions from the entire source shall not exceed one hundred (100) tons per twelve (12) consecutive month period. When combusting more than one fuel in the dryer/mixer burner, the Permittee shall limit fuel usage according to the following equation:

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

where:

- N = tons of nitrogen oxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 distillate fuel oil used in last 12 months
- F = gallons of No. 4 distillate fuel oil used in last 12 months
- B = gallons of biodiesel used in last 12 months**
- W = gallons of re-refined waste oil used in last 12 months
- E_G = 190 lb/million cubic feet of natural gas
- E_O = 24 lb/1000 gallons of No. 2 distillate fuel oil
- E_F = 47 lb/1000 gallons of No. 4 distillate fuel oil
- E_B = 26.4 lb/1000 gallons of biodiesel**
- E_W = 19 lb/1000 gallons of re-refined waste oil

Multiple Fuel Usage

FESOP Quarterly Report

QUARTER: _____ YEAR: _____

Month	Fuel Types (units)	Column 1	Column 2		Column 1 + Column 2	Equation Results	
		Usage This Month	Usage Previous 11 Months		Usage 12 Month Total	Sulfur Dioxide (SO2) Emissions (tons per 12 months)	Nitrogen Oxides (NOx) Emissions (tons per 12 months)
Month 1	Natural Gas (million cubic feet)			G			
	No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)			O			
	No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)			R			
	Biodiesel ≤ 0.5 wt% sulfur (gallons)			B			
	Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)			U			
Month 2	Natural Gas (million cubic feet)			G			
	No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)			O			
	No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)			R			
	Biodiesel ≤ 0.5 wt% sulfur (gallons)			B			
	Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)			U			
Month 3	Natural Gas (million cubic feet)			G			
	No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)			O			
	No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)			R			
	Biodiesel ≤ 0.5 wt% sulfur (gallons)			B			
	Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)			U			

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Comment 3:

J.H. Rudolph & Company, Inc. would like to be able to produce “warm” asphalt at the St. Croix plant. They are willing to adjust their limits to accommodate this addition.

Response to Comment 3:

According to the Federal Highway Administration, Office of Pavement Technology, Warm Mix Asphalt Technologies and Research Section (<http://www.fhwa.dot.gov/pavement/asphalt/wma.cfm>), an immediate benefit to producing WMA is a reduction in the amount of fuel needed during production. The five WMA technologies listed on the website appear to allow the production of WMA at lower temperatures by reducing the viscosity of the asphalt binder, allowing the aggregate to be fully coated at a lower temperature than is traditionally required in HMA production. With the decreased production temperature, comes the additional benefit of reduced emissions from burning fuels, fumes, and odors generated during asphalt production, and later during the paving application.

IDEM agrees with the recommended changes, since the addition of warm-mix asphalt will not increase emissions from this source. However, since no emission factors exist for the production of warm-mix asphalt, the worst-case is assumed and the annual asphalt production limit will include the production of both hot and warm-mix asphalt, combined.

The source is welcome to perform a test to determine the emissions from the production of warm-mix asphalt in the existing production plant, and submit a request for revision if desired.

The permit has been revised as follows:

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

The Permittee owns and operates a stationary drum hot-mix asphalt plant, **with the capability of producing warm-mix asphalt**, and a cold-mix asphalt production operation.

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

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

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. **This asphalt plant has the capability of producing warm-mix asphalt;**

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Drum, hot-mix asphalt plant

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. **This asphalt plant has the capability of producing warm-mix asphalt;**

D.1.1 PSD Limits [326 IAC 2-2]

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

- (a) The **combined** maximum amount of hot-mix **and warm-mix** asphalt produced shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

D.1.3 FESOP Limits [326 IAC 2-8-4] [326 IAC 8-1-6] [326 IAC 2-2]

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

- (a) The **combined** maximum amount of hot-mix **and warm-mix** asphalt produced shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

SECTION E.1

NSPS REQUIREMENTS

Emissions Unit Description: Hot-Mix Asphalt Plant

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. **This asphalt plant has the capability of producing warm-mix asphalt;**

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner
Parameter: Combined Hot-Mix and Warm-mix Asphalt Production
Limit: **The combined m**Maximum annual hot-mix **and warm-mix** asphalt production **rate** shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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Comment 4:

J.H. Rudolph & Company, Inc. would like to permit different maximum asphalt production rates for summer and winter, because environmental conditions present during the winter reduce the efficiency of the plant, thereby reducing its production capabilities.

Response to Comment 4:

IDEM disagrees with the recommended change, since it is IDEM's policy to permit facilities based on worst-case emissions assumptions (i.e., maximum throughput capacity for 8760 hrs/yr). This policy is in place to protect human health and aide the State of Indiana in meeting the National Ambient Air Quality Standards (NAAQS).

No changes were made to the permit as a result of this comment.

Comment 5:

J.H. Rudolph & Company, Inc. would like to correct the hot oil heater capacity from 1.5 to 2.0 BTU.

Response to Comment 5:

IDEM disagrees with the recommended changes, since the boiler capacity was already set at 2.115 MMBtu/hr in the original operating permit, FESOP No. F123-19457-00025. No changes were made to the permit as a result of this comment.

Comment 6:

J.H. Rudolph & Company, Inc. would like to increase their Gasoline Storage capacity from 1,000 to 3,000 gallons.

Response to Comment 6:

IDEM agrees with the recommended changes, since the increase in Gasoline Storage has a very little impact upon the emissions from this source, no adjustments to the source's limits are required to allow for the addition, and no rule applicability has changed as a result of this change. The permit has been revised as follows:

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:

(h) One (1) gasoline fuel transfer and dispensing operation, handling less than or equal to 1,300 gallons per day, having a maximum storage capacity less than or equal to 10,500 gallons, and including the following:

(1) One (1) gasoline storage tank, constructed in 2005, with a maximum storage capacity of **3,000** ~~4,200~~ gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the **3,000** ~~4,200~~ gallon gasoline storage tank, is considered an affected facility.

SECTION E.3

NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-6.1-5(a)(1): Gasoline Dispensing Facilities

- (h) One (1) gasoline fuel transfer and dispensing operation, handling less than or equal to 1,300 gallons per day, having a maximum storage capacity less than or equal to 10,500 gallons, and including the following:
- (1) One (1) gasoline storage tank, constructed in 2005, with a maximum storage capacity of **3,000** ~~4,200~~ gallons, uncontrolled and exhausting to the atmosphere;
- Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the **3,000** ~~4,200~~ gallon gasoline storage tank, is considered an affected facility.

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

Additional Changes

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

- (a) The Hot Oil Heating System emissions calculations, page 5 of 15 of TSD Appendix A.2, have been corrected since it was discovered that the Total PM\PM10\PM2.5 emissions, each, erroneously omitted the waste oil emissions. Since IDEM, OAQ does not make any changes to the original Technical Support Documentation (including the TSD and TSD Appendices A.1 and A.2), because it is used by IDEM, OAQ for historical purposes, the changes are shown on page 10 of 12 of ATSD Appendix A. These additional emissions were taken into account when revising the fuel limitations to accommodate the addition of the steel slag and biodiesel.
- (b) To better serve the southern portion of the state, IDEM opened a Southeast Regional office in 2009. The Southeast Regional office will serve the counties of Bartholomew, Brown, Clark, Crawford, Dearborn, Decatur, Fayette, Floyd, Franklin, Harrison, Jackson, Jefferson, Jennings, Lawrence, Monroe, Ohio, Orange, Perry, Ripley, Scott, Switzerland, Union, and Washington.

The Southeast Regional Office will provide local access to permits, inspection reports, and general information on environmental activities with State, municipal, and industrial facilities. In addition, staff of the Southeast Regional Office will be available to answer questions from the public on a wide range of environmental subjects and represents the environmental community at important gatherings.

The new office is located as follows:

IDEM Southeast Regional Office
820 West Sweet Street
Brownstown, Indiana 47220-9557
Phone: (812) 358-2027
Toll Free: (877) 271-0074 (within Indiana)
Fax: (812) 358-2058

Office hours are from Monday - Friday 8:15 a.m. until 4:45 p.m. (Eastern Time) except on scheduled holidays.

Accordingly, the permit has been revised as follows:

B.12 Emergency Provisions [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:

- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and **Southeast Regional Office** 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 Compliance and Enforcement Branch)

Facsimile Number: 317-233-6865

Southeast Regional Office phone: (812) 380-2305; fax: (812) 380-2304.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Ms. Hannah Desrosiers at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5374 or toll free at 1-800-451-6027 extension 4-5374.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

ATSD Appendix A: Unlimited Emissions Calculations
Entire Source

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Asphalt Plant Maximum Capacity

Maximum Hourly Asphalt Production =	325	ton/hr							
Maximum Annual Asphalt Production =	2,847,000	ton/yr							
Maximum Annual Steel Slag Usage =	2,847,000	ton/yr							
Maximum Dryer Fuel Input Rate =	120.0	MMBtu/hr							
Natural Gas Usage =	1,051	MMCF/yr							
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and		0.50	% sulfur				
No. 4 Fuel Oil Usage =	7,508,571	gal/yr, and		0.50	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and		0	% sulfur				
Propane Usage =	0	gal/yr, and		0	gr/100 ft3 sulfur				
Butane Usage =	0	gal/yr, and		0	gr/100 ft3 sulfur				
Biodiesel Limitation =	7,508,571	gal/yr, and		0.50	% sulfur				
Used/Waste Oil Usage =	7,508,571	gal/yr, and		1.00	% sulfur	1.00	% ash	0.100	% chlorine,
Diesel Engine Oil Usage =	0	gal/yr, and						0.030	% lead
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production							
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production							
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production							
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production							
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production							
Unlimited Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed							

Unlimited/Uncontrolled Emissions

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)								
	Criteria Pollutants							Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
Ducted Emissions									
Dryer Fuel Combustion (worst case)	240.27	191.47	191.47	551.88	176.45	3.75	44.15	33.50	24.78 (hydrogen chloride)
Dryer/Mixer (Process)	39,858.00	9,252.75	2,135.25	82.56	78.29	45.55	185.06	15.17	4.41 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	1.99	0	0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	4.23	3.37	3.37	9.73	3.11	0.07	0.78	0.59	0.44 (hydrogen chloride)
Inert Gas Generator Fuel Combustion	1.90E-04	7.59E-04	7.59E-04	5.99E-05	9.99E-03	5.49E-04	8.39E-03	1.89E-04	1.80E-04 (hexane)
Worst Case Emissions*	39,862.23	9,256.12	2,138.62	563.60	179.56	45.62	185.83	34.09	24.78 (hydrogen chloride)
Fugitive Emissions									
Asphalt Load-Out, Silo Filling, On-Site Yard	1.58	1.58	1.58	0	0	24.38	4.10	0.41	0.13 (formaldehyde)
Material Storage Piles	2.69	0.94	0.94	0	0	0	0	0	0
Material Processing and Handling	9.20	4.35	0.66	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	45.17	16.50	16.50	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	101.11	25.77	2.58	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	34,213.82	0	8,924.23	3,079.24 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0.01	0.00 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	0
Total Fugitive Emissions	159.75	49.14	22.25	0	0	34,238.23	4.10	8,924.64	3,079.25 (xylenes)
Totals Unlimited/Uncontrolled PTE	40,021.98	9,305.26	2,160.87	563.60	179.56	34,283.85	189.93	8,958.73	3,079.25 (xylenes)

negl = negligible

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

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion

Fuel component percentages provided by the source.

ATSD Appendix A: Unlimited Emissions Calculations
 Dryer/Mixer Fuel Combustion with Maximum Capacity > 100 MMBtu/hr

Company Name: J.H. Rudolph & Company, Inc.
 Source Address: 12050 Optical Road, English, Indiana 47118
 FESOP Renewal No.: F123-28142-00025
 Reviewer: Hannah L. Desrosiers
 Date Submitted: 06/24/09

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

Maximum Capacity	
Maximum Hourly Asphalt Production	325 ton/hr
Maximum Annual Asphalt Production	2,847,000 ton/yr
Maximum Fuel Input Rate	120 MMBtu/hr
Natural Gas Usage	1,051 MMCF/yr
No. 2 Fuel Oil Usage	7,508,571 gal/yr, and
No. 4 Fuel Oil Usage	7,508,571 gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage	0 gal/yr, and
Propane Usage	0 gal/yr, and
Butane Usage	0 gal/yr, and
Biodiesel Usage	7,508,571 gal/yr, and
Used/Waste Oil Usage	7,508,571 gal/yr, and
Diesel Engine Oil Usage	0 gal/yr, and

	0.50	% sulfur			
	0.50	% sulfur			
	0	% sulfur			
	0	gr/100 t ₃ sulfur			
	0	gr/100 t ₃ sulfur			
	0.50	% sulfur			
	1.00	% sulfur	1.00	% ash	0.100 % chlorine, 0.030 % lead

Criteria Pollutant	Emission Factor (units)										Unlimited/Uncontrolled Potential to Emit (tons/yr)										
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Biodiesel ** (lb/kgal)	Used/ Waste Oil (lb/kgal)	Diesel Engine (lb/kgal)		Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Biodiesel ** (tons/yr)	Used/ Waste Oil (tons/yr)	Diesel Engine (tons/yr)	Worse Case Fuel (tons/yr)	
PM	1.9	2.0	7.0	3.22	0.5	0.6	2.0	64.0	43.4		1.00	7.51	26.28	0	0	0	7.51	240.27	0	240.27	
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	3.3	51	43.4		3.99	12.39	31.16	0	0	0	12.39	191.47	0	191.47	
SO2	0.6	71.0	75.0	0	0	0	71.0	147.0	40.6		0.32	266.55	281.57	0	0	0	266.55	551.88	0	551.88	
NOx	190	24.0	47.0	47.0	13.0	15.0	26.4	19.0	617.4		99.86	90.10	176.45	0	0	0	99.11	71.33	0	176.45	
VOC	5.5	0.20	0.20	0.28	1.00	1.10	0.20	1.0	49.00		2.89	0.75	0.75	0	0	0	0.75	3.75	0	3.75	
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	5.0	133.0		44.1504	18.77	18.77	0	0	0	18.77	18.77	0	44.15	
Hazardous Air Pollutant																					
HCl								6.6					1.97E-02	0				24.78		24.78	
Antimony			5.25E-03	5.25E-03				negl					0					negl		2.0E-02	
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			5.6E-04	1.1E-01		1.1E-04	2.10E-03	4.96E-03	0				2.1E-03	4.13E-01		4.1E-01	
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			4.2E-04	negl		6.3E-06	1.58E-03	1.04E-04	0				1.6E-03	negl		1.6E-03	
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			4.2E-04	9.3E-03		5.8E-04	1.58E-03	1.49E-03	0				1.6E-03	3.49E-02		3.5E-02	
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			4.2E-04	2.0E-02		7.4E-04	1.58E-03	3.17E-03	0				1.6E-03	7.51E-02		7.5E-02	
Cobalt	8.4E-05		6.02E-03	6.02E-03				2.1E-04		4.4E-05		2.26E-02	0					7.88E-04		2.3E-02	
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			1.3E-03	1.65		2.6E-04	4.73E-03	5.67E-03	0				4.7E-03	6.2E+00		6.19	
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			8.4E-04	6.8E-02		2.0E-04	3.15E-03	1.13E-02	0				3.2E-03	2.55E-01		0.26	
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04			4.2E-04			1.4E-04	1.58E-03	4.24E-04	0				1.6E-03	4.13E-02		1.6E-03	
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			4.2E-04	1.1E-02		1.1E-03	1.58E-03	3.17E-01	0				1.6E-03	4.13E-02		0.317	
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			2.1E-03	negl		1.3E-05	7.88E-03	2.56E-03	0				7.9E-03	negl		7.9E-03	
1,1,1-Trichloroethane			2.36E-04	2.36E-04								8.86E-04	0							8.9E-04	
1,3-Butadiene									5.47E-03										0	0.0E+00	
Acetaldehyde									1.07E-01										0	0.0E+00	
Acrolein									1.30E-02										0	0.0E+00	
Benzene	2.1E-03		2.14E-04	2.14E-04							1.1E-03		8.03E-04	0					0	1.1E-03	
Bis(2-ethylhexyl)phthalate								2.2E-03											8.26E-03	8.3E-03	
Dichlorobenzene	1.2E-03							8.0E-07		6.3E-04									3.00E-06	6.3E-04	
Ethylbenzene			6.36E-05	6.36E-05								2.39E-04	0							2.4E-04	
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02			6.10E-02		1.65E-01	3.9E-02	2.29E-01	1.24E-01	0				2.29E-01		0	0.229	
Hexane	1.8E+00									0.95										0.946	
Phenol								2.4E-03											9.01E-03	9.0E-03	
Toluene	3.4E-03		6.20E-03	6.20E-03					5.73E-02	1.8E-03		2.33E-02	0						0	2.3E-02	
Total PAH Haps	negl		1.13E-03	1.13E-03				3.9E-02		2.35E-02	negl	4.24E-03	0						1.47E-01	1.5E-01	
Polycyclic Organic Matter		3.30E-03					3.30E-03					1.24E-02					1.24E-02			1.2E-02	
Xylene			1.09E-04	1.09E-04					3.99E-02			4.09E-04	0						0	4.1E-04	
Total HAPs											0.99	0.27	0.54	0	0	0	0.27	31.96	0	33.50	

Methodology

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

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

Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]

Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]

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

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2, No.4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)

Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Tables 3.3-1 and 3.3-2

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

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled "A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

Abbreviations

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

**ATSD Appendix A: Unlimited Emissions Calculations
Dryer/Mixer slag Processing
Limited Emissions**

Company Name: J.H. Rudolph & Company, Inc.
 Source Address: 12050 Optical Road, English, Indiana 47118
 FESOP Renewal No.: F123-28142-00025
 Reviewer: Hannah L. Desrosiers
 Date Submitted: 06/24/09

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

Steel slag:

Maximum Steel slag Usage = ton/yr
 Maximum SO2 Emissions from slag = lb/ton of slag processed % sulfur

	Emission Factor (lb/ton)**	Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.0014	1.99

Note:

Maximum steel slag usage has been set equal to annual asphalt plant limitation as a worst case scenario.

Methodology:

** Testing results for steel slag, obtained June 2009 from similar operations at an 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.

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

Abbreviations

SO2 = Sulfur Dioxide

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

Company Name: J.H. Rudolph & Company, Inc.
 Source Address: 12050 Optical Road, English, Indiana 47118
 FESOP Renewal No.: F123-28142-00025
 Reviewer: Hannah L. Desrosiers
 Date Submitted: 06/24/09

Maximum Hot Oil Heater Fuel Input Rate =	2.115	MMBtu/hr						
Natural Gas Usage =	19	MMCF/yr						
No. 2 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur				
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur				
Biodiesel Usage =	132,339	gal/yr, and	0.50	% sulfur				
Used/Waste Oil Usage =	132,339	gal/yr, and	1.00	% sulfur	1.00	% ash	0.100	% chlorine, 0.030 % lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)					Unlimited/Uncontrolled Potential to Emit (tons/yr)					Worse Case Fuel (tons/yr)
	Hot Oil Heater					Hot Oil Heater					
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Biodiesel ** (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Biodiesel ** (tons/yr)	Used/Waste Oil (tons/yr)	
PM	1.9	2.0	7.0	2.0	64.0	0.018	0.132	0.463	0.132	4.235	4.23
PM10/PM2.5	7.6	3.3	8.3	3.3	51	0.070	0.218	0.549	0.218	3.375	3.37
SO2	0.6	71.0	0.0	78.1	147.0	0.006	4.698	0.000	5.168	9.727	9.73
NOx	100.0	20.0	47.0	20.0	19.0	0.926	1.323	3.110	1.323	1.257	3.11
VOC	5.5	0.2	0.2	0.20	1.0	0.051	0.013	0.013	0.013	0.066	0.07
CO	84.0	5.0	5.0	5.0	5.0	0.778	0.331	0.331	0.331	0.331	0.78
Hazardous Air Pollutant											
HCL					6.6					0.44	0.44
Antimony			5.25E-03		negl			3.47E-04		negl	3.5E-04
Arsenic	2.0E-04	5.6E-04	1.32E-03	5.60E-04	1.1E-01	1.9E-06	3.71E-05	8.73E-05	3.71E-05	7.28E-03	7.3E-03
Beryllium	1.2E-05	4.2E-04	2.78E-05	4.20E-04	negl	1.1E-07	2.78E-05	1.84E-06	2.78E-05	negl	2.8E-05
Cadmium	1.1E-03	4.2E-04	3.98E-04	4.20E-04	9.3E-03	1.0E-05	2.78E-05	2.63E-05	2.78E-05	6.15E-04	6.2E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	4.20E-04	2.0E-02	1.3E-05	2.78E-05	5.59E-05	2.78E-05	1.32E-03	1.3E-03
Cobalt	8.4E-05		6.02E-03		2.1E-04	7.8E-07		3.98E-04		1.39E-05	4.0E-04
Lead	5.0E-04	1.3E-03	1.51E-03	1.26E-03	1.65	4.6E-06	8.34E-05	9.99E-05	8.34E-05	1.09E-01	0.11
Manganese	3.8E-04	8.4E-04	3.00E-03	8.40E-04	6.8E-02	3.5E-06	5.56E-05	1.99E-04	5.56E-05	4.50E-03	4.5E-03
Mercury	2.6E-04	4.2E-04	1.13E-04	4.20E-04		2.4E-06	2.78E-05	7.48E-06	2.78E-05		2.8E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	4.20E-04	1.1E-02	1.9E-05	2.78E-05	5.59E-03	2.78E-05	7.28E-04	5.6E-03
Selenium	2.4E-05	2.1E-03	6.83E-04	2.10E-03	negl	2.2E-07	1.39E-04	4.52E-05	1.39E-04	negl	1.4E-04
1,1,1-Trichloroethane			2.36E-04					1.56E-05			1.6E-05
Benzene	2.1E-03		2.14E-04			1.9E-05		1.42E-05			1.9E-05
Bis(2-ethylhexyl)phthalate					2.2E-03					1.46E-04	1.5E-04
Dichlorobenzene	1.2E-03				8.0E-07	1.1E-05				5.29E-08	1.1E-05
Ethylbenzene			6.36E-05					4.21E-06			4.2E-06
Formaldehyde	7.5E-02	6.1E-02	3.30E-02	6.10E-02		6.9E-04	4.04E-03	2.18E-03	4.04E-03		4.0E-03
Hexane	1.8E+00					0.02					0.02
Phenol					2.4E-03					1.59E-04	1.6E-04
Toluene	3.4E-03		6.20E-03			3.1E-05		4.10E-04			4.1E-04
Total PAH Haps	negl		1.13E-03		3.9E-02	negl		7.48E-05		2.59E-03	2.6E-03
Polycyclic Organic Matter		3.30E-03		3.30E-03			2.18E-04		2.18E-04		2.2E-04
Xylene			1.09E-04		3.99E-02			7.21E-06		2.64E-03	2.6E-03
Total HAPs =						1.7E-02	4.7E-03	9.2E-03	4.7E-03	1.3E-01	0.59
						Worst Single HAP					0.44 (HCL)

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 and No.4 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 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.

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled "A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

Abbreviations

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

ATSD Appendix A: Unlimited Emissions Calculations

Material Storage Piles

Company Name: J.H. Rudolph & Company, Inc.
 Source Address: 12050 Optical Road, English, Indiana 47118
 FESOP Renewal No.: F123-28142-00025
 Reviewer: Hannah L. Desrosiers
 Date Submitted: 06/24/09

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	1.50	0.824	0.288
Limestone	0	0	0	0	0
RAP	0.5	0.58	1.50	0.158	0.055
Stone & Gravel	1.6	1.85	1.50	0.507	0.177
Steel Slag	3.8	4.40	1.50	1.204	0.421
Totals				2.69	0.94

Methodology

PM2.5 = PM10

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.

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

RAP - recycled asphalt pavement

ATSD Appendix A: Limited Emissions Summary
Entire Source

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Asphalt Plant Limitations

Maximum Hourly Asphalt Production =	325	ton/hr											
Annual Asphalt Production Limitation =	500,000	ton/yr											
Steel Slag Usage Limitation =	375,000	ton/yr											
Natural Gas Limitation =	1,009	MMCF/yr											
No. 2 Fuel Oil Limitation =	2,507,340	gal/yr, and			0.50	% sulfur							
No. 4 Fuel Oil Limitation =	2,373,615	gal/yr, and			0.50	% sulfur							
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and			0	% sulfur							
Propane Limitation =	0	gal/yr, and			0	gr/100 ft3 sulfur							
Butane Limitation =	0	gal/yr, and			0	gr/100 ft3 sulfur							
Biodiesel Limitation =	2,507,340	gal/yr, and			0.50	% sulfur							
Used/Waste Oil Limitation =	1,211,028	gal/yr, and			1.00	% sulfur		1.00	% ash	0.100	% chlorine,	0.030	% lead
PM Dryer/Mixer Limitation =	0.858	lb/ton of asphalt production											
PM10 Dryer/Mixer Limitation =	0.345	lb/ton of asphalt production											
PM2.5 Dryer/Mixer Limitation =	0.364	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											
Steel Slag SO2 Dryer/Mixer Limitation =	0.0014	lb/ton of slag processed											
Cold Mix Asphalt VOC Usage Limitation =	68.89	tons/yr											
HCl Limitation =	6.6	lb/kgal											

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)																		
	Criteria Pollutants							Hazardous Air Pollutants											
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP										
Ducted Emissions																			
Dryer Fuel Combustion (worst case)	38.75	44.06	30.88	32.72	30.88	32.72	89.01	94.30	95.88	97.68	2.78	2.83	42.39	43.18	6.26	6.60	4.00	4.23	(hydrogen chloride)
Dryer/Mixer (Process)	214.47	249.73	86.21	89.79	90.94	94.52	14.50	13.75	8.00	32.50	0	0	32.50	2.66	0.78	0	0	(formaldehyde)	
Dryer/Mixer Slag Processing	0	0	0	0	0.26	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion (worst case)	4.23	3.37	3.37	3.37	9.73	3.11	0.07	0.05	0.78	0.78	0.59	0.44	0.78	0.59	0.44	0.59	0.44	(hydrogen chloride)	
Inert Gas Generator Fuel Combustion	1.90E-04	7.59E-04	7.59E-04	7.59E-04	5.99E-05	0.01	5.49E-04	0.01	5.49E-04	0.01	1.89E-04	1.80E-04	1.89E-04	1.89E-04	1.80E-04	1.89E-04	1.80E-04	(hexane)	
Worst Case Emissions*	218.71	249.94	89.59	90.04	94.31	94.74	99.00	98.99	8.07	8.05	43.17	43.96	6.85	7.19	4.00	4.23	4.00	4.23	(hydrogen chloride)
Fugitive Emissions																			
Asphalt Load-Out, Silo Filling, On-Site Yard	0.28	0.28	0.28	0	0	0	4.28	0.72	0.07	0.07	0.07	0.02	0.07	0.07	0.02	0.02	0.02	(formaldehyde)	
Material Storage Piles	2.69	4.49	0.94	0.52	0.94	0.52	0	0	0	0	0	0	0	0	0	0	0	0	
Material Processing and Handling	1.62	0.76	0.12	0.12	0.12	0.12	0	0	0	0	0	0	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	7.93	2.90	2.90	2.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	17.77	4.53	0.45	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	0	0	0	68.89	67.60	0	0	17.97	17.63	6.20	6.99	6.20	6.99	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0.02	0	0	0.01	0.002	0	0.01	0.002	0.002	0.002	(xylenes)	
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Fugitive Emissions	30.29	29.09	9.41	8.99	4.69	4.26	0	0	73.19	74.94	0.72	0.72	18.05	17.71	6.20	6.99	6.20	6.99	(xylenes)
Totals Limited/Controlled Emissions	249.00	279.03	99.00	99.00	99.00	99.00	99.00	98.99	81.26	79.96	43.89	44.68	24.90	24.90	6.20	6.99	6.20	6.99	(xylenes)

negl = negligible

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

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion

Fuel component percentages provided by the source.

ATSD Appendix A: Limited Emissions Summary
 Dryer/Mixer Fuel Combustion with Maximum Capacity > 100 MMBtu/hr

Company Name: J.H. Rudolph & Company, Inc.
 Source Address: 12050 Optical Road, English, Indiana 47118
 FESOP Renewal No.: F123-28142-00025
 Reviewer: Hannah L. Desrosiers
 Date Submitted: 06/24/09

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Production and Fuel Limitations

Maximum Hourly Asphalt Production:	325	ton/hr
Annual Asphalt Production Limitation:	500,000	ton/yr
Natural Gas Limitation:	1,009	MMCF/yr
No. 2 Fuel Oil Limitation:	2,507,340	gals/yr, and
No. 4 Fuel Oil Limitation:	2,373,615	gals/yr, and
Residual (No. 5 or No. 6) Fuel Oil Limitation:	0	gals/yr, and
Propane Limitation:	0	gr/100 ft3 sulfur
Butane Limitation:	0	gr/100 ft3 sulfur
Biodiesel Usage:	2,507,340	gallyr, and
Used/Waste Oil Limitation:	1,211,028	gallyr, and
	0.50	% sulfur
	0.50	% sulfur
	0	% sulfur
	0	% sulfur
	0.50	% sulfur
	1.00	% ash
	0.100	% chlorine,
	0.030	% lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)								Limited Potential to Emit (tons/yr)								Worst Case Fuel (tons/yr)				
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Biodiesel ** (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)	Biodiesel ** (tons/yr)	Used/Waste Oil (tons/yr)					
PM	1.9	2.0	7.0	3.22	0.5	0.6	2.0	64.0	0.96	2.51	8.31	0	0	0	2.51	38.75	44.06	38.75	44.06		
PM10	7.6	3.3	8.3	4.72	0.5	0.6	3.3	51.0	3.84	4.14	9.85	0	0	0	4.14	30.88	32.72	30.88	32.72		
SO2	0.6	71.0	75.0	0	0	0	71.0	147.0	0.30	89.01	89.01	0	0	0	89.01	89.01	84.30	89.01	84.30		
NOx	190	24.0	47.0	47.0	13.0	15.0	26.4	19.0	95.88	30.09	55.78	0	0	0	33.10	11.50	32.49	95.88	37.68		
VOC	5.5	0.20	0.20	0.28	1.00	1.10	0.20	1.0	2.78	0.25	0.24	0	0	0	0.25	0.61	0.64	2.78	2.83		
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	5.0	42.39	6.64	5.93	0	0	0	6.27	3.03	3.24	42.39	43.48		
Hazardous Air Pollutant																					
HCl							6.6									4.00	4.23	4.00	4.23		
Antimony			5.25E-03	5.25E-03							6.23E-03	6.60E-03	0					negl	6.23E-03	6.60E-03	
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			5.6E-04	1.1E-01	1.0E-04	7.02E-04	7.44E-04	1.57E-03	1.66E-03	0		7.02E-04	6.66E-02	7.06E-02	0.07	0.07	
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			4.2E-04	negl	6.1E-06	6.2E-06	6.58E-04	3.30E-05	3.60E-06	0		5.27E-04	negl	5.27E-04	5.3E-04	6.6E-04	
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			4.2E-04	9.3E-03	5.6E-04	6.7E-04	5.27E-04	6.58E-04	4.72E-04	6.00E-04	0		5.27E-04	5.63E-03	6.07E-03	5.6E-03	6.0E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			4.2E-04	2.0E-02	7.1E-04	7.2E-04	5.27E-04	5.59E-04	1.00E-03	1.06E-03	0		5.27E-04	1.21E-02	1.26E-02	0.01	0.01
Cobalt	8.4E-05		6.02E-03	6.02E-03				2.1E-04	4.2E-05	4.3E-05		7.14E-03	7.67E-03	0			1.27E-04	1.36E-04	7.1E-03	7.6E-03	
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			1.3E-03	1.65	2.5E-04	2.6E-04	1.58E-03	1.67E-03	1.79E-03	1.90E-03	0		1.58E-03	1.0E+00	1.1E+00	1.00	1.06
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			8.4E-04	6.8E-02	1.9E-04	2.0E-04	1.05E-03	1.12E-03	3.56E-03	3.77E-03	0		1.05E-03	4.12E-02	4.36E-02	0.04	0.04
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04			4.2E-04		1.3E-04	5.27E-04	6.58E-04	1.34E-04	1.42E-04	0		5.27E-04	5.27E-04	6.66E-03	7.06E-03	5.3E-04	6.6E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			4.2E-04	1.1E-02	1.1E-03	5.27E-04	6.58E-04	1.00E-01	1.06E-01	0		5.27E-04	6.66E-03	7.06E-03	0.10	0.11	
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			2.1E-03	negl	1.2E-05	2.63E-03	2.79E-03	8.11E-04	8.59E-04	0		2.63E-03	negl	2.63E-03	2.6E-03	2.8E-03	
1,1,1-Trichloroethane			2.36E-04	2.36E-04										0				negl	2.8E-04	3.0E-04	
1,3-Butadiene														0					0	0	
Acetaldehyde																			0	0	
Acrolein																			0	0	
Benzene	2.1E-03		2.14E-04	2.14E-04					1.1E-03		2.54E-04	2.69E-04	0						1.1E-03	1.1E-03	
Bis(2-ethylhexyl)phthalate								2.2E-03											1.33E-03	1.44E-03	
Dichlorobenzene	1.2E-03							8.0E-07	6.1E-04	6.2E-04									4.84E-07	5.19E-07	
Ethylbenzene			6.36E-05	6.36E-05								7.55E-05	8.00E-06	0					7.5E-05	8.0E-06	
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02			6.10E-02		3.8E-02	3.9E-02	7.65E-02	8.10E-02	3.92E-02	4.15E-02	0		7.65E-02			0.08	0.08
Hexane	1.8E+00								0.91	0.93									0.91	0.93	
Phenol								2.4E-03											1.45E-03	1.64E-03	
Toluene	3.4E-03		6.20E-03	6.20E-03					1.7E-03			7.36E-03	7.80E-03	0					7.4E-03	7.8E-03	
Total PAH Haps	negl		1.13E-03	1.13E-03				3.9E-02	negl			1.34E-03	1.42E-03	0					2.37E-02	2.64E-02	
Polycyclic Organic Matter		3.30E-03					3.30E-03			4.14E-03	4.38E-03								4.1E-03	4.4E-03	
Xylene			1.09E-04	1.09E-04								1.29E-04	1.37E-04	0					1.3E-04	1.4E-04	
Total HAPs									0.95	0.97	0.09	0.17	0.18	0.00	0	0	0.09	5.15	5.46	6.26	6.60
																Worst Single HAP	4.00	4.23	(HCL)		

Methodology

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

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

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled "A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

**ATSD Appendix A: Limited Emissions Summary
Dryer/Mixer**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Maximum Hourly Asphalt Production =	325	ton/hr
Annual Asphalt Production Limitation =	500,000	ton/yr
PM Dryer/Mixer Limitation =	0.858 0.879	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.345 0.359	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.364 0.378	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.858 0.879	0.858 0.879	0.858 0.879	214.5 219.8	214.5 219.8	214.5 219.8	214.5 219.8
PM10*	0.345 0.359	0.345 0.359	0.345 0.359	86.2 89.8	86.2 89.8	86.2 89.8	86.2 89.8
PM2.5*	0.364 0.378	0.364 0.378	0.364 0.378	90.9 94.5	90.9 94.5	90.9 94.5	90.9 94.5
SO2**	0.003	0.011	0.058	0.9	2.8	14.5	14.5
NOx**	0.026	0.055	0.055	6.5	13.8	13.8	13.8
VOC**	0.032	0.032	0.032	8.0	8.0	8.0	8.0
CO***	0.130	0.130	0.130	32.5	32.5	32.5	32.5
Hazardous Air Pollutant							
HCl			2.10E-04			0.05	0.05
Antimony	1.80E-07	1.80E-07	1.80E-07	4.50E-05	4.50E-05	4.50E-05	4.50E-05
Arsenic	5.60E-07	5.60E-07	5.60E-07	1.40E-04	1.40E-04	1.40E-04	1.40E-04
Beryllium	negl	negl	negl	negl	negl	negl	0
Cadmium	4.10E-07	4.10E-07	4.10E-07	1.03E-04	1.03E-04	1.03E-04	1.03E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	1.38E-03	1.38E-03	1.38E-03	1.38E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	6.50E-06	6.50E-06	6.50E-06	6.50E-06
Lead	6.20E-07	1.50E-05	1.50E-05	1.55E-04	3.75E-03	3.75E-03	0.00
Manganese	7.70E-06	7.70E-06	7.70E-06	1.93E-03	1.93E-03	1.93E-03	1.93E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	6.00E-05	6.50E-04	6.50E-04	6.50E-04
Nickel	6.30E-05	6.30E-05	6.30E-05	1.58E-02	1.58E-02	1.58E-02	0.02
Selenium	3.50E-07	3.50E-07	3.50E-07	8.75E-05	8.75E-05	8.75E-05	8.75E-05
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	1.00E-02	1.00E-02	1.00E-02	0.01
Acetaldehyde			1.30E-03			0.33	0.33
Acrolein			2.60E-05			6.50E-03	0.01
Benzene	3.90E-04	3.90E-04	3.90E-04	0.10	0.10	0.10	0.10
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.06	0.06	0.06	0.06
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	0.78	0.78	0.78	0.78
Hexane	9.20E-04	9.20E-04	9.20E-04	0.23	0.23	0.23	0.23
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.01	0.01	0.01	0.01
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.03	0.03
Quinone			1.60E-04			0.04	0.04
Toluene	1.50E-04	2.90E-03	2.90E-03	0.04	0.73	0.73	0.73
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.05	0.22	0.22	0.22
Xylene	2.00E-04	2.00E-04	2.00E-04	0.05	0.05	0.05	0.05

Total HAPs 2.66
Worst Single HAP 0.78 (formaldehyde)

Methodology

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

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

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

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

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

Abbreviations

VOC - Volatile Organic Compounds
HCl = Hydrogen Chloride
SO2 = Sulfur Dioxide

HAP = Hazardous Air Pollutant
PAH = Polycyclic Aromatic Hydrocarbon

**ATSD Appendix A: Limited Emissions Summary
Dryer/Mixer slag Processing
Limited Emissions**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Steel slag:

Maximum Steel slag Usage =

375,000

 ton/yr
Maximum SO2 Emissions from slag =

0.0014

 lb/ton of slag processed

0.66

 % sulfur

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

Note:
Maximum steel slag usage has been set equal to annual asphalt plant limitation as a worst case scenario.

Methodology:
** Testing results for steel slag, obtained June 2009 from similar operations at an 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.
Potential to Emit SO2 from Steel slag (tons/yr) = Maximum Steel slag Usage (ton/yr) * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations
SO2 = Sulfur Dioxide

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

Company Name: J.H. Rudolph & Company, Inc.
 Address City IN Zip: 12050 Optical Road, English, Indiana 47118
 FESOP Renewal No: F123-28142-00025
 Reviewer: Hannah L. Desrosiers
 Date Submitted: June 24, 2009

Maximum Hot Oil Heater Fuel Input Rate =	2.115	MMBtu/hr						
Natural Gas Usage =	19	MMCF/yr						
No. 2 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur				
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur				
Biodiesel Usage =	132,339	gal/yr, and	0.50	% sulfur				
Used/Waste Oil Usage =	132,339	gal/yr, and	1.00	% sulfur	1.00	% ash	0.100	% chlorine, 0.030 % lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)					Unlimited/Uncontrolled Potential to Emit (tons/yr)					Worse Case Fuel (tons/yr)
	Hot Oil Heater					Hot Oil Heater					
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Biodiesel ** (lb/kgal)	Re-refined Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Biodiesel ** (tons/yr)	Re-refined Waste Oil (tons/yr)	
PM	1.9	2.0	7.0	2.0	64.0	0.018	0.132	0.463	0.132	4.235	4.23
PM10/PM2.5	7.6	3.3	8.3	3.3	51.0	0.070	0.218	0.549	0.218	3.375	3.37
SO2	0.6	71.0	75.0	78.1	147.0	0.006	4.698	4.963	5.168	9.727	9.73
NOx	100	20.0	47.0	20.0	19.0	0.926	1.323	3.110	1.323	1.257	3.11
VOC	5.5	0.20	0.20	0.20	1.0	0.051	0.013	0.013	0.013	0.066	0.07
CO	84	5.0	5.0	5.0	5.0	0.778	0.331	0.331	0.331	0.331	0.78
Hazardous Air Pollutant											
HCL					6.6					0.44	0.44
Antimony			5.25E-03		negl			3.47E-04		negl	3.47E-04
Arsenic	2.0E-04	5.6E-04	1.32E-03	5.60E-04	1.1E-01	1.9E-06	3.71E-05	8.73E-05	3.71E-05	7.28E-03	7.28E-03
Beryllium	1.2E-05	4.2E-04	2.78E-05	4.20E-04	negl	1.1E-07	2.78E-05	1.84E-06	2.78E-05	negl	2.78E-05
Cadmium	1.1E-03	4.2E-04	3.98E-04	4.20E-04	9.3E-03	1.0E-05	2.78E-05	2.63E-05	2.78E-05	6.15E-04	6.15E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	4.20E-04	2.0E-02	1.3E-05	2.78E-05	5.59E-05	2.78E-05	1.32E-03	1.32E-03
Cobalt	8.4E-05		6.02E-03		2.1E-04	7.8E-07		3.98E-04		1.39E-05	3.98E-04
Lead	5.0E-04	1.3E-03	1.51E-03	1.26E-03	1.65	4.6E-06	8.34E-05	9.99E-05	8.34E-05	1.09E-01	0.11
Manganese	3.8E-04	8.4E-04	3.00E-03	8.40E-04	6.8E-02	3.5E-06	5.56E-05	1.99E-04	5.56E-05	4.50E-03	4.50E-03
Mercury	2.6E-04	4.2E-04	1.13E-04	4.20E-04		2.4E-06	2.78E-05	7.48E-06	2.78E-05		2.78E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	4.20E-04	1.1E-02	1.9E-05	2.78E-05	5.59E-03	2.78E-05	7.28E-04	5.59E-03
Selenium	2.4E-05	2.1E-03	6.83E-04	2.10E-03	negl	2.2E-07	1.39E-04	4.52E-05	1.39E-04	negl	1.39E-04
1,1,1-Trichloroethane			2.36E-04					1.56E-05			1.56E-05
Benzene	2.1E-03		2.14E-04			1.9E-05		1.42E-05			1.95E-05
Bis(2-ethylhexyl)phthalate					2.2E-03					1.46E-04	1.46E-04
Dichlorobenzene	1.2E-03				8.0E-07	1.1E-05				5.29E-08	1.11E-05
Ethylbenzene			6.36E-05					4.21E-06			4.21E-06
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	6.10E-02		6.9E-04	4.04E-03	2.18E-03	4.04E-03		4.04E-03
Hexane	1.80					1.7E-02					0.02
Phenol					2.4E-03					1.59E-04	1.59E-04
Toluene	3.4E-03		6.20E-03			3.1E-05		4.10E-04			4.10E-04
Total PAH Haps	negl		1.13E-03		3.9E-02	negl		7.48E-05		2.59E-03	2.59E-03
Polycyclic Organic Matter		3.30E-03		3.30E-03			2.18E-04		2.18E-04		2.18E-04
Xylene			1.09E-04		3.99E-02			7.21E-06		2.64E-03	2.64E-03
Total HAPs						1.7E-02	4.7E-03	9.2E-03	4.7E-03	1.3E-01	0.59
						Worst Single HAP					0.44

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 and No.4 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- 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.

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled "A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

Abbreviations

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

ATSD Appendix A: Limited Emissions Summary
 Material Storage Piles
 Fugitive Particulate Emissions

Company Name: J.H. Rudolph & Company, Inc.
 Source Address: 12050 Optical Road, English, Indiana 47118
 FESOP Renewal No.: F123-28142-00025
 Reviewer: Hannah L. Desrosiers
 Date Submitted: 06/24/09

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

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	1.50	0.824	0.288
Gravel	1.6	1.85	1.50	0.507	0.177
Limestone	0	0	0	0	0
RAP	0.5	0.58	1.50	0.158	0.055
Steel Slag	3.8	4.40	1.50	1.20	0.421
Totals				2.69	0.94

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.

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PM2.5 = PM10

PTE = Potential to Emit

ATSD Appendix A: Limited Emissions Summary
Cold Mix Asphalt Production and Stockpiles

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Cold Mix Asphalt VOC Usage Limitation = $\frac{68.89}{67.60}$ 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%	72.51 74.46	68.89 67.60	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	98.41 96.58	68.89 67.60	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	275.56 270.44	68.89 67.60	4.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	148.47 145.70	68.89 67.60	2.155
Other asphalt with solvent binder	25.9%	2.5%	2,755.56 2,704.14	68.89 67.60	40.0
Worst Case Limited PTE of VOC =				68.89 67.60	

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) =	17.97 17.63
Limited PTE of Single HAP (tons/yr) =	6.20 6.08 Xylenes

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

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

Methodology

Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [VOC Solvent Usage Limitation (tons/yr)]
 Limited PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
 Limited PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds
PTE = Potential to Emit

Indiana Department of Environmental Management Office of Air Quality

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

Source Description and Location
--

Source Name: J.H. Rudolph & Company, Inc.
Source Location: 12050 Optical Road, English, Indiana 47118
County: Perry
SIC Code: 2951
Permit Renewal No.: F123-28142-00025
Permit Reviewer: Hannah L. Desrosiers

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from J.H. Rudolph & Company, Inc. relating to the operation of a stationary drum hot-mix asphalt plant.

Existing Approvals

The source has been operating under FESOP No. F123-19457-00025, issued on December 21, 2004.

County Attainment Status

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

Pollutant	Designation
PM10	Unclassifiable effective November 15, 1990.
PM2.5	Unclassifiable or attainment effective April 5, 2005.
NO ₂	Cannot be classified or better than national standards.
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. ¹
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 (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Perry County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM2.5**
 Perry County has been classified as attainment for PM2.5. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.

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

Fugitive Emissions

This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Permitted Emission Units and Pollution Control Equipment

On June 24, 2009, J.H. Rudolph & Company, Inc. submitted an application to the OAQ requesting to renew the operating permit for their St. Croix location. J.H. Rudolph & Company, Inc. has confirmed that they do not use slag in their aggregate mix, for this asphalt plant (St. Croix). The J.H. Rudolph & Company, Inc. - St. Croix Plant was issued a FESOP on December 21, 2004.

The source consists of the following permitted emission unit(s):

- (a) One (1) drum hot-mix asphalt plant, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, and No. 4 distillate fuel oil as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1;

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

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and consisting of the following:

- (1) Four (4) aggregate conveyors;
- (2) One (1) scalping screen;
- (3) Six (6) cold feed bins;

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

- (c) One (1) recycled asphalt pavement (RAP) system, constructed in 2005, with a maximum throughput capacity of one hundred (100) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:

- (1) One (1) recycled asphalt pavement (RAP) Crusher;
- (2) Five (5) RAP conveyors;
- (3) Two (2) RAP feeder bins; and
- (4) One (1) RAP screen.

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

- (d) One (1) cold-mix asphalt production operation, constructed in 2005, uncontrolled and exhausting to the atmosphere, and including:
 - (1) cold-mix (stockpile mix) asphalt storage piles;
 - (2) One (1) split compartment prime asphalt storage tank, constructed in 2005, with a maximum storage capacity of 15,000 gallons, uncontrolled and exhausting to the atmosphere; and
 - (3) One (1) emulsified asphalt storage tank, constructed in 2005, with a maximum storage capacity of 10,000 gallons, uncontrolled and exhausting to the atmosphere.

The source also consists of the following insignificant activities:

- (a) One (1) liquid asphalt cement hot oil heating system, constructed in 2005, and consisting of the following:
 - (1) One (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, using No. 2 distillate fuel oil, No. 4 distillate fuel oil, and re-refined waste oil as backup fuels, uncontrolled and exhausting to one (1) stack, identified as EP2;
- (b) One (1) natural gas fired inert gas generator, constructed in 2005, with a maximum rated heat input capacity of two hundred twenty-eight ten-thousandths (0.0228) MMBtu/hr, uncontrolled and exhausting to the atmosphere;
- (c) One (1) liquid asphalt storage tank, with a maximum storage capacity of 20,000 gallons, uncontrolled and exhausting to the atmosphere;
- (d) One (1) liquid asphalt storage tank, with a maximum storage capacity of 25,000 gallons, uncontrolled and exhausting to the atmosphere; and
- (e) One (1) liquid asphalt storage tank, with a maximum storage capacity of 18,000 gallons, uncontrolled and exhausting to the atmosphere;
- (f) One (1) No. 2 distillate fuel oil storage tank, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;
- (g) One (1) waste oil storage tank, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;
- (h) One (1) gasoline fuel transfer and dispensing operation, handling less than or equal to 1,300 gallons per day, having a maximum storage capacity less than or equal to 10,500 gallons, and including the following:
 - (1) One (1) gasoline storage tank, constructed in 2005, with a maximum storage capacity of 1,200 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 1,200-gallon gasoline storage tank, is considered an affected facility.

- (i) One (1) petroleum fuel, other than gasoline, dispensing facility, having a maximum storage capacity of less than or equal to 10,500 gallons and dispensing less than or equal to 230,000 gallons per month, including the following:
 - (1) One (1) No. 2 on-road fuel tank, constructed in 2005, with a maximum storage capacity of 1,200 gallons, uncontrolled and exhausting to the atmosphere;
- (j) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (k) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities; and
- (l) Paved and unpaved roads and parking lots with public access [326 IAC 6-4].

Unpermitted Emission Units and Pollution Control Equipment

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

Emission Units and Pollution Control Equipment Removed From the Source

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

Enforcement Issues

J.H. Rudolph & Company, Inc. was issued a FESOP on December 21, 2004, to operate a stationary drum hot-mix asphalt plant at their St. Croix Location. Pursuant to 326 IAC 2-8-3(h), the source was required to apply for a FESOP Renewal at least nine (9) months prior to the date of expiration of the source's existing permit, or no later than March 20, 2009. On June 24, 2009, IDEM, OAQ received an application from J. H. Rudolph & Company, Inc.'s St. Croix Plant. IDEM is currently reviewing this matter and will take appropriate action. This proposed approval is intended to satisfy the requirements of the operating permit rules.

Emission Calculations

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

Permit Level Determination – FESOP

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

Pollutant	tons/year		NOTES
PM	40,020.78	(1)	Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.
PM10 ⁽¹⁾	9,304.84		
PM2.5	2,160.46		(2) HAPs include 2-butanone, 2-methylnaphthalene, acetaldehyde, benzene, ethylbenzene, formaldehyde, hexane, hydrogen chloride, naphthalene, phenanthrene, polycyclic organic matter, quinone, toluene, total PAH Haps, xylenes, and antimony, arsenic, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium compounds.
SO2	561.61		
NOx	179.56		(3) Appendix A.1 of this TSD reflects the unrestricted, uncontrolled, potential emissions of the source.
VOC	34,283.35		
CO	189.93		
Total HAPs ⁽²⁾	8,958.73		
Maximum (Worst Case) HAP	3,079.25 (xylenes)		

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) PM10, PM2.5, SO2, NOx, VOC, and CO are each greater than one hundred (100) tons per year, therefore, the source is subject to the provisions of 326 IAC 2-7. However, the source has agreed to continue to limit its PM10, PM2.5, SO2, NOx, VOC, and CO emissions to less than Title V levels, consequently the source will be issued a FESOP Renewal.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is still 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 still less than twenty-five (25) tons per year.
- (c) This type of operation is still 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, this existing source was already subject to an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions are still counted toward the determination of PSD, and Part 70 Permit applicability.

PTE of the Entire Source After Issuance of the FESOP

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

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Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of the FESOP Renewal (tons/year)								
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Single HAP
Ducted Emissions									
Dryer Fuel Combustion (worst case) ⁽¹⁾	41.06	32.72	32.72	94.03	97.68	2.83	43.18	6.6	4.23 (hydrogen chloride)
Dryer/Mixer (Process) ⁽²⁾	219.78	89.79	94.52	14.50	13.75	8.00	32.50	2.66	0.78 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	0.13	0.22	0.22	4.70	1.32	0.05	0.78	0.52	0.44 (hydrogen chloride)
Inert Gas Generator Fuel Combustion	negl	negl	negl	negl	0.01	negl	0.01	negl	negl
Total Process Emissions	219.91	90.01	94.74	99.00	99.00	8.05	43.96	7.12	4.23 (hydrogen chloride)
Fugitive Emissions									
Asphalt Load-Out, Silo Filling, On-Site Yard ⁽³⁾	0.28	0.28	0.28	0	0	4.28	0.72	0.07	0.02 (formaldehyde)
Material Storage Piles	1.49	0.52	0.52	0	0	0	0	0	0
Material Processing and Handling ⁽³⁾	1.62	0.76	0.12	0	0	0	0	0	0
Material Crushing, Screening, and Conveying ⁽³⁾	7.93	2.90	2.90	0	0	0	0	0	0
Unpaved and Paved Roads (worst case) ⁽¹⁾	17.78	4.53	0.45	0	0	0	0	0	0
Cold-Mix Asphalt Production ⁽⁴⁾	0	0	0	0	0	67.88	0	17.71	6.11 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0.01	0.002 (xylenes)
Volatile Organic Liquid Storage Vessels**	0	0	0	0	0	negl	0	negl	negl
Total Fugitive Emissions	29.09	8.99	4.26	0	0	72.19	0.72	17.78	6.11 (xylenes)
Total Limited/Controlled Emissions	249.00	99.00	99.00	99.00	99.00	80.24	44.68	24.90	6.11 (xylenes)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA
Emission Offset/Nonattainment NSR Major Source Thresholds	NA	NA	NA	NA	NA	NA	NA	NA	NA
negl = negligible NA = Not applicable * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". Additionally, US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. ** Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible. (1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP). (4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).									

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(a) FESOP Status

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

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

- (1) Pursuant to 326 IAC 2-8-4, the PM10, PM2.5, and CO emissions from the dryer/mixer burner, and all other emission units at this source, shall be limited as follows:
 - (A) The hot-mix asphalt production rate shall not exceed 500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month. This is a new limit for this source.
 - (B) PM10 emissions from the dryer/mixer shall not exceed three hundred fifty-nine thousandths (0.359) pounds of PM10 per ton of asphalt produced. This is a change from the existing limit of fifty-nine thousandths (0.059) pounds per ton of asphalt produced.
 - (C) PM2.5 emissions from the dryer/mixer shall not exceed three hundred seventy-eight thousandths (0.378) pounds of PM2.5 per ton of asphalt produced. This is a new limit for this source.
 - (D) SO2 emissions from the dryer/mixer shall not exceed (0.058) pounds of SO2 per ton of asphalt produced. This is a new limit for this source.
 - (E) CO emissions from the dryer/mixer shall not exceed one hundred thirty thousandths (0.130) pounds of CO per ton of asphalt produced. This is a new limit for this source.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, SO2, and CO to less than one hundred (100) tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

See Appendix A for the detailed calculations.

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

- (i) During this review, the emissions calculations were updated to reflect the source's most current "worst-case" operating conditions for all units, and includes emissions not previously counted. Additionally, since OAQ relies on the most up-to-date emission factors recommended by U.S. EPA, facility emissions have been characterized using the most recent version of U.S. EPA's AP-42.
- (ii) A new FESOP limit for the maximum annual hot-mix asphalt production (ton/yr) has been added to the permit to make the existing pound per ton (lb/ton) PM10 limit more practicably enforceable, in order to ensure compliance with the one hundred (100) ton per year FESOP threshold, and making the requirements of 326 IAC 2-7 Title V (Part 70) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;
- (iii) A new FESOP limit for PM2.5 has been added to the permit, because on

May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions, with an effective date for the rule of July 15, 2008. While Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements, the May 8, 2008 rule revisions require IDEM to regulate PM₁₀ emissions as a surrogate for PM_{2.5} emissions until 326 IAC 2-2 is revised.

- (iv) A new FESOP limit for SO₂ has been added to the permit, because IDEM has determined that a pound per ton (#/ton) limit for the drying/mixing process, in combination with the fuel sulfur content limit, is necessary to enable the source to ensure compliance with the one hundred (100) ton per year FESOP threshold for SO₂, and to render the requirements of 326 IAC 2-7 Title V (Part 70) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.
 - (v) CO emissions from the drying/mixing process, not previously accounted for in FESOP 123-19457-00025, have been calculated. A new FESOP pound per ton (#/ton) limit for CO has been added to the permit, in order to ensure compliance with the one hundred (100) ton per year FESOP threshold for CO, and to render the requirements of 326 IAC 2-7 Title V (Part 70) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.
 - (vi) The annual asphalt production limit, selected by the source to maximize their cold-mix asphalt VOC limit, is such that the existing pound per ton (#/ton) limit for PM₁₀ can be increased to allow the source added operational flexibility and still ensure compliance with the one hundred (100) ton per year FESOP threshold, and making the requirements of 326 IAC 2-7 Title V (Part 70) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;
- (2) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall not use slag as an aggregate additive in its hot mix asphalt operations. This is a new requirement for this source.

Compliance with this requirement, combined with the potential SO₂ emissions from all other emission units at this source, shall limit the source-wide total potential to emit SO₂ to less than one hundred (100) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

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

- (i) A new condition prohibiting the use of slag in the aggregate mix has been added to the permit in order to ensure compliance with the one hundred (100) ton per year FESOP threshold for SO₂, and making the requirements of 326 IAC 2-7 Title V (Part 70) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;
- (3) Pursuant to 326 IAC 2-8, the Permittee shall continue to control PM, PM₁₀, and PM_{2.5} emissions from the asphalt load-out and on-site yard, hot oil and asphalt heaters, material screening, and conveying, material processing and handling, material storage piles, and paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.
- (4) Pursuant to 326 IAC 2-8-4, the SO₂, NO_x, and HAPs emissions from the dryer/mixer burner

shall be limited as follows:

- (A) The sulfur content of the No. 2 and No. 4 distillate fuel oils, each, shall continue to not exceed five-tenths percent (0.5%) by weight;
- (B) The sulfur content of the re-refined waste oil shall continue to not exceed one percent (1.00%) by weight;
- (C) The ash content of the re-refined waste oil shall not exceed one percent (1.00%) by weight. This is a new limit for this source.
- (D) The lead content of the re-refined waste oil shall not exceed thirty-thousandths percent (0.030%) by weight. This is a new limit for this source.
- (E) The chlorine content of the re-refined waste oil shall not exceed ten-hundredths percent (0.10%) by weight. This is a new limit for this source.
- (F) The HCl emissions from the dryer/mixer burner shall not exceed six and six tenths (6.6) pounds of HCl per one thousand (1000) gallons of re-refined waste oil burned, based on a chlorine content limit of ten hundredths percent (0.10%) by weight. This is a new limit for this source.
- (G) Single Fuel Usage Limitations:
When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner and all other combustion equipment, the usage of fuel shall be limited as follows:
 - (i) Re-refined waste oil usage shall not exceed 1,283,020 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. This is a change from the existing limit of 1,793,780 gallons, or equivalent, per twelve (12) consecutive month period;
 - (ii) Natural gas usage shall continue to not exceed 1028 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month;
 - (iii) No. 2 distillate fuel oil usage shall not exceed 2,656,394 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. This is a change from the existing limit of 2,599,718 gallons, or equivalent, per twelve (12) consecutive month period;
 - (iv) No. 4 distillate fuel oil usage shall not exceed 2,514,719 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. This is a change from the existing limit of 2,461,067 gallons, or equivalent, per twelve (12) consecutive month period;
- (H) Multiple Fuel Usage Limitation:
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner and all other combustion equipment, emissions from the dryer/mixer shall be limited as follows:
 - (i) SO₂ emissions from the dryer/mixer and all other combustion equipment shall be less than one hundred (100) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Note: The following terms and conditions from previous approvals have been

revised in this FESOP Renewal:

- (α) The existing permit specifies compliance in terms of fuel equivalency, however, the source has indicated that they would prefer compliance be demonstrated by equation, as follows;

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

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

Where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
G = million cubic feet of natural gas used in the last 12 months
O = gallons of No. 2 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur content
F = gallons of No. 4 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur
W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.0% sulfur
E_G = 0.60 lb/million cubic feet of natural gas
E_O = 71 pounds/1000 gallons of No. 2 distillate fuel oil
E_F = 75 pounds/1000 gallons of No. 4 distillate fuel oil
E_W = 147 lb/1000 gallons of re-refined waste oil

- (ii) NO_x emissions from the dryer/mixer and all other combustion equipment shall be less than one hundred (100) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

- (α) The existing permit specifies compliance in terms of fuel equivalency, however, the source has indicated that they would prefer compliance be demonstrated by equation, as follows;

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

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

where:

- N = tons of nitrogen oxide emissions for a 12-month consecutive period
G = million cubic feet of natural gas used in the last 12 months
O = gallons of No. 2 distillate fuel oil used in last 12 months
F = gallons of No. 4 distillate fuel oil used in last 12 months
W = gallons of re-refined waste oil used in last 12 months
E_G = 190 lb/million cubic feet of natural gas
E_O = 24 lb/1000 gallons of No. 2 distillate fuel oil
E_F = 47 lb/1000 gallons of No. 4 distillate fuel oil
E_W = 19 lb/1000 gallons of re-refined waste oil

Compliance with these limits, combined with the limited PTE from all other emission units at this source, shall limit the source-wide total potential to emit NO_x and SO₂ to less than one hundred (100) tons per twelve (12) consecutive month period, each, HCL to less than ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

See Appendix A for the detailed calculations.

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

- (i) The fuel usage limit for the re-refined waste oil (the limiting factor for PM, PM₁₀, PM_{2.5} and SO₂), has been reduced from the existing limit of 1,793,780 gallons, or equivalent, per twelve (12) consecutive month period to 1,283,020 gallons per twelve (12) consecutive month period, in order to ensure compliance with the one hundred (100) ton per year FESOP threshold for each pollutant and making the requirements of 326 IAC 2-7 Title V (Part 70) not applicable. Additionally, the following applies
 - (α) The source has requested that the existing sulfur content limit, for the re-refined waste oil, of seven tenths percent (0.7%) be raised to one percent (1.0%) to allow for increased operational flexibility. The fuel usage limit was reduced to accommodate this increase.
 - (β) A new ash content limit for re-refined waste oil (a limiting factor for PM, PM₁₀, PM_{2.5}) has been added to the permit to ensure compliance with the one hundred (100) ton per year FESOP threshold for each pollutant and making the requirements of 326 IAC 2-7 Title V (Part 70) not applicable;
 - (χ) A new chlorine content limit for re-refined waste oil (a limiting factor for HAPs) has been added to the permit to ensure compliance with the ten (10) ton per year single HAP, and the twenty-five (25) ton per year combined HAP, thresholds and making the requirements of 326 IAC 2-7 Title V (Part 70) not applicable;
 - (δ) A new lead content limit for re-refined waste oil (another limiting factor for HAPs) has been added to the permit to ensure compliance with the ten (10) ton per year single HAP, and the twenty-five (25) ton per year combined HAP, thresholds and making the requirements of 326 IAC 2-7 Title V (Part 70) not applicable;
- (ii) The fuel usage limit for No. 2 distillate fuel oil has been increased from the existing limit of 2,599,718 gallons, or equivalent, per twelve (12) consecutive month period to 2,656,394 gallons, or equivalent, per twelve (12) consecutive month period. This is a change from the existing fuel equivalency of 1000 gal of No. 2 distillate fuel oil per every 690.0 gal of re-refined waste oil based on SO₂ emissions, such that the total gallons of re-refined waste oil and re-refined waste oil equivalent input does not exceed the limit specified (or a maximum of 1,793,780 gallons of re-refined waste oil per twelve (12) consecutive month period). This change increases the source's operational flexibility.

- (iii) The fuel usage limit for No. 4 distillate fuel oil has been increased from the existing limit of 2,461,067 gallons, or equivalent, per twelve (12) consecutive month period to 2,514,719 gallons, or equivalent, per twelve (12) consecutive month period. This is a change from the existing fuel equivalency of 1000 gal of No. 2 distillate fuel oil per every 729.0 gal of re-refined waste oil based on SO₂ emissions, such that the total gallons of re-refined waste oil and re-refined waste oil equivalent input does not exceed the limit specified (or a maximum of 1,793,780 gallons of re-refined waste oil per twelve (12) consecutive month period). This change increases the source's operational flexibility.
- (5) Pursuant to 326 IAC 2-8-4, the Volatile Organic Compound (VOC) emissions from the cold-mix, cutback asphalt production shall be limited as follows:
- (A) The usage of liquid binder in the production of cold-mix cutback asphalt shall be limited such that VOC emissions do not exceed sixty-seven and eighty-eight hundredths (67.88) tons per twelve (12) consecutive month period with compliance determined at the end of each month. This is a change from the existing VOC emission limit of eighty-two and eighty hundredths (82.80) tons per year.

Compliance with this limit, combined with the VOC emissions from all other emission units at this source, will continue to limit source-wide VOC emissions to less than one hundred (100) tons per three hundred sixty-five (365) consecutive day period, and render 326 IAC 2-7 (Part 70 Permit Program), and 326 IAC 2-2 (PSD)) not applicable.

See Appendix A for the detailed calculations.

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

- (i) The most recent AP-42 emission factor has also been used to characterize VOC emissions from the cold-mix asphalt production and storage. The cold-mix VOC limit has been revised to accommodate this update, in addition to the effect of the new asphalt production limit on the VOC emissions from the dryer/mixer unit.
 - (ii) HAP emissions from the cold-mix asphalt production and storage, not previously accounted for in FESOP 123-19457-00025, have been calculated. The revised cold-mix VOC limit is sufficient to limit the cold-mix asphalt production rate such that source wide potential to emit of any single HAP is limited to less than ten (10) tons per year, and any combination of HAPs is limited to less than twenty-five (25) tons per year; and therefore, rendering 326 IAC 2-7 (Part 70) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.
- (b) PSD Minor Source
This existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit particulate matter (PM) is limited to less than one hundred (100) tons per year and the potential to emit all (*other*) attainment regulated pollutants are less than one hundred (100) tons per year, and this source is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

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

- (1) The hot-mix asphalt production rate shall not exceed 500,000 tons per twelve (12)

consecutive month period with compliance determined at the end of each month.

- (2) The PM emissions from the dryer/mixer shall not exceed eight hundred seventy-nine thousandths (0.879) pounds of PM per ton of asphalt produced.

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 two hundred fifty (250) tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

See Appendix A for detailed calculations.

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

- (A) As noted above, the emissions calculations were updated to reflect the source's most current "worst-case" operating conditions for all units, and includes emissions not previously counted. Additionally, the most recent AP-42 emission factors have been used to characterize these emissions.
- (B) A new maximum annual hot-mix asphalt production limit (ton/yr) has been added to the permit to make the existing pound per ton (lb/ton) PM limit more practicably enforceable, to limit PM emissions from the entire source to less than two hundred fifty (250) tons per year, making 326 IAC 2-2 PSD not applicable;
- (C) The annual asphalt production limit, selected by the source to maximize their cold-mix asphalt VOC limit, is such that the existing pound per ton (#/ton) limit for PM can be increased to allow the source added operational flexibility and still make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

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

This stationary drum hot-mix asphalt plant, approved for construction in 2005, is still subject to the New Source Performance Standard, 40 CFR 60, Subpart I (326 IAC 12), because it was constructed after June 11, 1973, and meets the definition of a hot-mix asphalt facility, as described in §60.91.

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

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

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

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

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

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

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

The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in this renewal, because the one (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, 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 for Volatile Organic Liquid Storage Vessels

(1) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in this renewal for the one (1) 25,000 gallon liquid asphalt storage tank, and the one (1) 20,000 gallon liquid asphalt storage tank, because although each tank was constructed after the rule applicability date of July 23, 1984 and each has a maximum capacity greater than 75 m³ (19,813 gallons) but less than 151 m³ (39,890 gallons), the liquid stored in each tank has a true maximum vapor pressure of less than fifteen kiloPascals (15.0 kPa). Additionally, each tank is no longer subject to the recordkeeping requirements of 40 CFR 60.116b (a) and (b) through 326 IAC 12, due to recent revisions to State Rule, 326 IAC 1-1-3 (References to the Code of Federal Regulations).

(2) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in this renewal for the one (1) 18,000 gallon liquid asphalt storage tank, the one (1) 15,500 gallon No. 2 distillate fuel oil storage tank, the one (1) 15,500 gallon waste oil storage tank, the one (1) 15,000 gallon split compartment prime asphalt storage tank, the one (1) 10,000 gallon emulsified asphalt storage tank, and the one (1) 1,200 gallon No. 2 on-road fuel storage tank, each, because although each tank was constructed after the rule applicability date of July 23, 1984, each tank has a maximum capacity of less than 75 m³ (19,813 gallons), and the liquid stored in each tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa). Additionally, each tank is no longer subject to the recordkeeping requirements of 40 CFR 60.116b (a) and (b) through 326 IAC 12, due to recent revisions to State Rule, 326 IAC 1-1-3 (References to the Code of Federal Regulations).

(3) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in this renewal for the one (1) 1,200 gallon gasoline storage tank, because although the tank was constructed after the rule applicability date of July 23, 1984 and the liquid stored in the tank has a maximum true vapor pressure of greater than fifteen kiloPascals (15.0 kPa), the tank has a maximum capacity of less than 75 m³ (19,813 gallons). Additionally, this tank is no longer subject to the recordkeeping requirements of 40 CFR 60.116b (a) and (b) through 326 IAC 12, due to recent revisions to State Rule, 326 IAC 1-1-3 (References to the Code of Federal Regulations).

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

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

- (e) 40 CFR 60, Subpart OOO - Standards for Nonmetallic Mineral Processing Plants
Recycled Asphalt Pavement (RAP) systems, located at hot-mix asphalt facilities, including crushers and/or grinding mills used to reduce the size of nonmetallic minerals embedded in recycled asphalt pavement, and subsequent affected facilities up to, but not including, the first storage silo or bin, are subject to the New Source Performance Standard Subpart OOO, 40 CFR 60.670 through 60.676.

Therefore, the RAP grinding/crushing, material handling, screening, conveying, and material transfer points are each subject to the following portions of 40 CFR 60, Subpart OOO (included as Attachment C of the permit):

- (1) 40 CFR 60.670;
- (2) 40 CFR 60.671;
- (3) 40 CFR 60.672;
- (4) 40 CFR 60.673;
- (5) 40 CFR 60.674;
- (6) 40 CFR 60.675; and
- (7) 40 CFR 60.676.

An affected facility that is subject to the provisions of Subpart I, or that follows in the plant process any facility subject to the provisions of Subpart I, is not subject to the provisions of this Subpart [OOO].

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

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

- (f) 40 CFR 60, Subpart UUU - Standards for Calciners and Dryers in Mineral Industries
The stationary drum hot-mix asphalt plant is still 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, therefore the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR 60, Subpart UUU (326 IAC 12), still do not apply to this source, and the requirements are not included in this renewal.
- (g) There are no other New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) included in this renewal.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (a) 40 CFR 63, Subpart DDDDD - NESHAPs for Industrial, Commercial, and Institutional Boilers and Process Heaters
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD (326 IAC 20), are not included in this renewal, because this source is still not a major source of HAPs.
- (b) 40 CFR 63, Subpart LLLLL - NESHAPs for Asphalt Processing and Asphalt Roofing Manufacturing
The stationary drum hot-mix asphalt plant is still not an asphalt processing plant or an asphalt roofing manufacturing facility because it does not engage in the preparation of asphalt flux or asphalt roofing materials. Additionally, it is not a major source of HAPs, and is not located at nor is it a part of a major source of HAP emissions. Therefore, the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL (326 IAC 20-71), still do not apply to this source, and the requirements are not included in the in this renewal.

(c) 40 CFR 63, Subpart CCCCCC - NESHAP for the Source Category Identified as Gasoline Dispensing Facilities (GDF)

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

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

- (1) 40 CFR 63.11504(a)(1)(iii), (a)(2), (a)(3);
- (2) 40 CFR 63.11505(a)(1), (b), (e);
- (3) 40 CFR 63.11506(a);
- (4) 40 CFR 63.11507(g);
- (5) 40 CFR 63.11508(a), (b), (d)(1), (d)(2), (d)(8);
- (6) 40 CFR 63.11509(a), (b), (c)(6), (c)(7), (d), (e), (f);
- (7) 40 CFR 63.11510;
- (8) 40 CFR 63.11511; and
- (9) 40 CFR 63.11512.

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

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

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

Compliance Assurance Monitoring (CAM)

- (a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

- (a) 326 IAC 1-7 (Stack Height)
The unlimited and uncontrolled PM10 and SO2 emissions from this existing source, each, are still greater than one hundred (100) tons per year. Therefore, this source continues to be subject to this rule and requirements are included in Section C, of this renewal.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
PSD applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.
- (c) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit HAPs from the existing stationary drum hot-mix asphalt plant and the existing cold-mix asphalt production operation, combined, are still greater than ten (10) tons per year for any single HAP and greater than twenty-five (25) tons per year of a combination of HAPs. However, the source has agreed to continue to limit the potential HAPs emissions from this facility to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air

Pollutants (HAP)) still do not apply, see "PTE of the Entire Source after Issuance" section above, and the requirements are not included in the in this renewal.

(d) 326 IAC 2-6 (Emission Reporting)

Pursuant to 326 IAC 2-6-1, the existing source is still not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 still does not apply and the requirements are not included in the in this renewal.

(e) 326 IAC 2-8-4 (FESOP)

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

(f) 326 IAC 5-1 (Opacity Limitations)

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

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

(g) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

The one (1) existing natural gas fired hot oil heater, having a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, is subject to 326 IAC 6-2-4 because it was constructed after the rule applicability date of September 21, 1983, and it meets the definition of an indirect heating unit, as defined in 326 IAC 1-2-19, since it combusts fuel to produce usable heat that is to be transferred through a heat-conducting materials barrier or by a heat storage medium to a material to be heated so that the material being heated is not contacted by, and adds no substance to the products of combustion.

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

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

(h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

- (1) The existing drum dryer/mixer continues to be subject to 40 CFR 60, Subpart I (Standards of Performance for Hot-mix Asphalt Facilities), incorporated by reference through 326 IAC 12. Therefore, pursuant to 326 IAC 6-3-1(c)(5), the existing dryer/mixer is still not subject to the requirements of 326 IAC 6-3 because it is subject to the more stringent particulate limit established in 326 IAC 12.
- (2) The existing hot oil heater is still not subject to the requirements of 326 IAC 6-3 because it is already otherwise subject to 326 IAC 6-2.

(i) 326 IAC 6-4 (Fugitive Dust Emissions)

The asphalt load-out and on-site yard, hot oil and asphalt heaters, material screening, and conveying, material processing and handling, material storage piles, and paved and unpaved roads each

continue to have the potential to emit fugitive particulate emissions; therefore, this existing source continues to be subject to the requirements of 326 IAC 6-4. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the existing source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

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

This source is still subject to the requirements of 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), because it was constructed after December 13, 1985, and continues to have a potential to emit fugitive particulate matter of more than twenty-five (25) tons per year. A copy of the Fugitive Dust Control Plan is included as Attachment A to the permit.

(k) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)

(1) The existing dryer/mixer burner is still subject to 326 IAC 7-1.1 because it has potential SO₂ emissions of greater than twenty-five (25) tons per year (limited potential emissions are eight (8.0) tons per year). Therefore, pursuant to this rule, sulfur dioxide emissions from the dryer/mixer burner shall continue to be limited to:

(A) Five-tenths (0.5) pounds per million Btu heat input for distillate oil combustion. This equates to a maximum allowable sulfur content of approximately five tenths percent (0.5%) by weight for the distillate fuel oils.

(B) One and six tenths (1.6) pounds per million Btu heat input for residual oils. This equates to a maximum allowable sulfur content of approximately one percent (1.0%) by weight for the residual/waste oils.

(2) The hot oil heater and inert gas generator are each still not subject to the requirements of 326 IAC 7-1.1 because they each still have potential SO₂ emissions of less than twenty-five (25) tons per year. Therefore, the requirements of this rule are still not included in the renewal for these facilities.

(l) 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)

Pursuant to this rule, the source shall continue to submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate (pounds SO₂ per MMBtu), to the OAQ upon request.

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

(1) The unlimited potential VOC emissions from the existing dryer/mixer are greater than twenty-five (25) tons per year. However, the source shall continue to limit the VOC emissions from the existing dryer/mixer to less than twenty-five (25) tons per year, therefore, rendering the requirements of 326 IAC 8-1-6 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:

(A) The asphalt production rate shall not exceed 500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(B) VOC emissions from the dryer/mixer shall not exceed thirty-two thousandths (0.032) pounds of VOC per ton of asphalt produced.

Compliance with these limits shall limit the potential to emit VOC 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 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

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

- (i) A new FESOP limit for a maximum annual hot-mix asphalt production rate has been added to the permit. This allows for dual ton/yr and #/ton limits, which are more practicably enforceable, and offer a more thorough and comprehensive method of determining compliance. Thereby, enabling the source to more easily ensure compliance with the twenty five (25) tons/yr threshold, and render the requirements of 326 IAC 8-1-6 BACT not applicable.
 - (ii) The most recent AP-42 emission factor has been used to characterize VOC emissions from the fuel combustion and the drying/mixing process. In order to ensure compliance with the twenty five (25) tons/yr threshold, to render the requirements of 326 IAC 8-1-6 BACT not applicable, a new (#/ton) limit for VOC has been added to the permit;
- (2) The cold-mix asphalt production operation, a source of potential VOC emissions greater than twenty-five (25) tons per year, is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving); therefore, the requirements of 326 IAC 8-1-6 still do not apply to the cold-mix asphalt production and are not included in this renewal.
 - (3) The unlimited potential VOC emissions from each liquid asphalt storage tank, fuel oil storage tank and waste oil storage tank is less than twenty-five (25) tons per year, therefore, each liquid asphalt storage tank, fuel oil storage tank and waste oil storage tank is not subject to 326 IAC 8-1-6, and the the requirements are not included in the renewal for these facilities.
 - (4) There are no other 326 IAC 8 Rules that are applicable to the stationary drum hot-mix asphalt plant.

See Appendix A for the detailed calculations.

- (n) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
The existing one (1) 25,000 gallon liquid asphalt storage tank, one (1) 20,000 gallon liquid asphalt storage tank, one (1) 18,000 gallon liquid asphalt storage tank, one (1) 15,000 gallon emulsified asphalt storage tank, one (1) 10,000 gallon split compartment asphalt storage tank, the one (1) 15,500 gallon re-refined waste oil storage tank, and the one (1) 15,500 gallon No. 2 distillate fuel oil storage tank, each, are not subject to the requirements of 326 IAC 8-4-3 because they are each, not petroleum liquid storage vessels with capacities greater than thirty-nine thousand (39,000) gallons.
- (o) 326 IAC 8-5-2 (Asphalt paving rules)
Any paving application made after January 1, 1980, is subject to the requirements of 326 IAC 8-5-2. Pursuant to this rule, no person shall cause or allow the use of cutback asphalt or asphalt emulsion containing more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:
 - (a) penetrating prime coating
 - (b) stockpile storage
 - (c) application during the months of November, December, January, February and March.
- (p) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
This stationary source is located in Perry County. The requirements of 326 IAC 8-9 apply only to vessels used to store a volatile organic liquid that are located in Clark, Floyd, Lake or Porter Counties. Therefore, the requirements of 326 IAC 8-9 do not apply to any of the liquid asphalt storage tanks, fuel oil storage tanks, and/or waste oil storage tanks.

- (q) There are no other 326 IAC 8 Rules that are applicable to this existing stationary drum hot-mix asphalt plant.
- (r) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
 The existing one (1) one hundred twenty (120) mmBtu dryer burner still does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it still has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (mmBtu); therefore, it is still not subject to this rule and the requirements are not included in this renewal.
- (s) 326 IAC 12 (New Source Performance Standards)
 See Federal Rule Applicability Section of this TSD.
- (t) 326 IAC 13-8 (Used Oil Requirements)
 Upon further review, IDEM has determined that the requirements of this rule do not need to be included in the renewal, since they are regulated by another agency.
- (u) 326 IAC 20 (Hazardous Air Pollutants)
 See Federal Rule Applicability Section of this TSD.

Compliance Determination, Monitoring and Testing Requirements
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- (a) The compliance determination and monitoring requirements applicable to this proposed renewal are as follows:
 - (1) The existing dryer/mixer has applicable compliance determination conditions as specified below:

Emission Unit	Control Device	Pollutant	Timeframe for Testing	Frequency of Testing	Limit or Requirement
Dryer/mixer	Baghouse	PM	Within five (5) yrs of last valid test*	Once every five (5) years	0.879 lb PM/ton of asphalt for PSD; and 0.04 gr/dscf for 40 CFR 60, Subpart I
Dryer/mixer	Baghouse	PM10 PM2.5	No later than 180 days after publication of revised test method	Once every five (5) years	0.359 lb PM10 /ton of asphalt; and 0.378 lb PM2.5/ton of asphalt

* The last stack test occurred on October 15, 2009. The source was in compliance at that time.

- (A) In order to comply with the PM, PM10, and PM2.5 limitations in the permit, the baghouse for the dryer/mixer, shall continue to be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
 - (B) The annual hot-mix asphalt production rate will be used to verify compliance with the PSD PM emission limitation, the FESOP PM10, PM2.5, and CO emission limitations, and the BACT avoidance VOC emission limitation.
 - (C) The fuel characteristics (i.e., sulfur content) and usage rates will be used to verify compliance with the SO2, NOx and HAPs emission limitations.
- (2) The usage of liquid binder in the production of cold-mix cutback asphalt will be used to verify compliance with the FESOP VOC emission limitation.

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

Emission Unit & Control Device	Parameter	Frequency	Range	Excursions and Exceedances
Baghouse for the dryer/mixer stack (EP1)	Visible Emissions	Once per day	normal/abnormal	Response Steps
	Pressure Drop	Once per day	2.0 to 6.0 inches	Response Steps
	Bags in baghouse	As needed	normal/abnormal	Response Steps
Conveyors, screens, and material transfer points	Visible Emissions	Once per day	normal/abnormal	Response Steps

These monitoring conditions are necessary because the baghouse used in conjunction with the dryer/mixer must continue to operate properly to ensure continued compliance with 40 CFR 60, Subpart I, 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permit Program) not applicable.

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

- (1) Calendar quarter inspections of the bags in the baghouse have not been included in the renewal for this source. IDEM has determined that it is the Permittee's responsibility to include routine control device inspection requirements in the applicable preventive maintenance plan. Since the Permittee is in the best position to determine the appropriate frequency of control device inspections and the details regarding which components of the control device should be inspected, the conditions requiring control device inspections have been removed from the permit. In addition, the requirement to keep records of the inspections has been removed. Daily pressure drop and visible emissions inspections are deemed sufficient to ensure compliance with the PSD PM, and FESOP PM10 and PM2.5 limitations.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on *(date)*.

The operation of this source shall be subject to the conditions of the attached proposed FESOP Renewal No.: F123-28142-00025. The staff recommends to the Commissioner that this FESOP Renewal be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Ms. Hannah Desrosiers at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5374 or toll free at 1-800-451-6027 extension 4-5374.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

**Appendix A.1: Unlimited Emissions Calculations
Entire Source**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Asphalt Plant Maximum Capacity

Maximum Hourly Asphalt Production =	325	ton/hr									
Maximum Annual Asphalt Production =	2,847,000	ton/yr									
Maximum Annual Slag Usage =	0	ton/yr		0	% sulfur						
Maximum Dryer Fuel Input Rate =	120.0	MMBtu/hr									
Natural Gas Usage =	1,051	MMCF/yr									
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and		0.50	% sulfur						
No. 4 Fuel Oil Usage =	7,508,571	gal/yr, and		0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and		0	% sulfur						
Propane Usage =	0	gal/yr, and		0	gr/100 ft3 sulfur						
Butane Usage =	0	gal/yr, and		0	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	7,508,571	gal/yr, and		1.00	% sulfur	1.00	% ash	0.100	% chlorine,	0.030	% lead
Diesel Engine Oil Usage =	0	gal/yr, and									
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production									
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production									
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production									
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production									
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production									
Unlimited Slag SO2 Dryer/Mixer Emission Factor =	0	lb/ton of slag processed									

Unlimited/Uncontrolled Emissions

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)									
	Criteria Pollutants							Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP	
Ducted Emissions										
Dryer Fuel Combustion (worst case)	240.27	191.47	191.47	551.88	176.45	3.75	44.15	33.50	24.78	(hydrogen chloride)
Dryer/Mixer (Process)	39,858.00	9,252.75	2,135.25	82.56	78.29	45.55	185.06	15.17	4.41	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.00	0	0	0	0	0	
Hot Oil Heater Fuel Combustion (worst case)	4.23	3.37	3.37	9.73	3.11	0.07	0.78	0.59	0.44	(hydrogen chloride)
Inert Gas Generator Fuel Combustion	1.90E-04	7.59E-04	7.59E-04	5.99E-05	9.99E-03	5.49E-04	8.39E-03	1.89E-04	1.80E-04	(hexane)
Worst Case Emissions*	39,862.23	9,256.12	2,138.62	561.61	179.56	45.62	185.83	34.09	24.78	(hydrogen chloride)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	1.58	1.58	1.58	0	0	24.38	4.10	0.41	0.13	(formaldehyde)
Material Storage Piles	1.49	0.52	0.52	0	0	0	0	0	0	
Material Processing and Handling	9.20	4.35	0.66	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	45.17	16.50	16.50	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	101.11	25.77	2.58	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	34,213.82	0	8,924.23	3,079.24	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0.01	0.00	(xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	0	
Total Fugitive Emissions	158.54	48.72	21.83	0	0	34,238.23	4.10	8,924.64	3,079.25	(xylenes)
Totals Unlimited/Uncontrolled PTE	40,020.78	9,304.84	2,160.46	561.61	179.56	34,283.85	189.93	8,958.73	3,079.25	(xylenes)

negl = negligible

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

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion

Fuel component percentages provided by the source.

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Maximum Capacity

Maximum Hourly Asphalt Production	325	ton/hr
Maximum Annual Asphalt Production	2,847,000	ton/yr
Maximum Fuel Input Rate	120	MMBtu/hr
Natural Gas Usage	1,051	MMCF/yr
No. 2 Fuel Oil Usage	7,508,571	gal/yr, and
No. 4 Fuel Oil Usage	7,508,571	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage	0	gal/yr, and
Propane Usage	0	gal/yr, and
Butane Usage	0	gal/yr, and
Used/Waste Oil Usage	7,508,571	gal/yr, and
Diesel Engine Oil Usage	0	gal/yr, and

	0.50	% sulfur
	0.50	% sulfur
	0	% sulfur
	0	gr/100 R3 sulfur
	0	gr/100 R3 sulfur
	1.00	% sulfur
	1.00	% ash
	0.100	% chlorine
	0.030	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)								Unlimited/Uncontrolled Potential to Emit (tons/yr)								Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/ Waste Oil (lb/kgal)	Diesel Engine 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)	Diesel Engine (tons/yr)	
PM	1.9	2.0	7.0	3.22	0.5	0.6	64.0	43.4	1.00	7.51	26.28	0	0	0	240.27	0	240.27
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	51	43.4	3.99	12.39	31.16	0	0	0	191.47	0	191.47
SO2	0.6	71.0	75.0	0	0	0	147.0	40.6	0.32	266.55	281.57	0	0	0	551.88	0	551.88
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	617.4	99.86	90.10	176.45	0	0	0	71.33	0	176.45
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	49.00	2.89	0.75	0.75	0	0	0	3.75	0	3.75
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	133.0	44.1504	18.77	18.77	0	0	0	18.77	0	44.15
Hazardous Air Pollutant																	
HCl							6.6								24.78		24.78
Antimony			5.25E-03	5.25E-03			negl								negl		2.0E-02
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01		1.1E-04	2.10E-03	4.96E-03	0	0	0	4.13E-01		4.1E-01
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl		6.3E-06	1.58E-03	1.04E-04	0	0	0	negl		1.6E-03
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03		5.8E-04	1.58E-03	1.49E-03	0	0	0	3.49E-02		3.5E-02
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02		7.4E-04	1.58E-03	3.37E-03	0	0	0	7.51E-02		7.5E-02
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04		4.4E-05		2.26E-02	0	0	0	7.89E-04		2.3E-02
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			1.65		2.6E-04	4.73E-03	5.67E-03	0	0	0	6.2E+00		6.19
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02		2.0E-04	3.15E-03	1.13E-02	0	0	0	2.55E-01		0.26
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04					1.4E-04	1.58E-03	4.24E-04	0	0	0			1.6E-03
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02		1.1E-03	1.58E-03	3.17E-01	0	0	0	4.13E-02		0.317
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl		1.3E-05	7.88E-03	2.66E-03	0	0	0	negl		7.9E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04							8.86E-04	0	0	0			8.9E-04
1,3-Butadiene							5.47E-03										0.0E+00
Acetaldehyde							1.07E-01										0.0E+00
Acrolein							1.30E-02										0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04					1.1E-03		8.03E-04	0	0	0			1.1E-03
Bis(2-ethylhexyl)phthalate							2.2E-03										8.3E-03
Dichlorobenzene	1.2E-03						8.0E-07		6.3E-04						8.26E-03		8.3E-04
Ethylbenzene			6.36E-05	6.36E-05							2.39E-04	0	0	0			2.4E-04
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				1.65E-01	3.9E-02	2.29E-01	1.24E-01	0	0	0			0.229
Hexane	1.8E+00								0.95								0.946
Phenol							2.4E-03								9.01E-03		9.0E-03
Toluene	3.4E-03		6.20E-03	6.20E-03				5.73E-02	1.8E-03		2.33E-02	0	0	0			2.3E-02
Total PAH Haps	negl		1.13E-03	1.13E-03				3.9E-02	negl		4.24E-03	0	0	0	1.47E-01		1.5E-01
Polycyclic Organic Matter		3.30E-03								1.24E-02							1.2E-02
Xylene			1.09E-04	1.09E-04				3.99E-02			4.09E-04	0	0	0			4.1E-04
Total HAPs									0.99	0.27	0.54	0	0	0	31.96	0	33.50

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]
 Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
 Sources of AP-42 Emission Factors for fuel combustion:
 Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2, No.4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5
 Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Tables 3.3-1 and 3.3-2

Abbreviations

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

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

Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Maximum Hourly Asphalt Production = 325 ton/hr
Maximum Annual Asphalt Production = 2,847,000 ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	39858	39858	39858	39858
PM10*	6.5	6.5	6.5	9252.75	9252.75	9252.75	9252.75
PM2.5*	1.5	1.5	1.5	2135.25	2135.25	2135.25	2135
SO2**	0.0034	0.011	0.058	4.8	15.7	82.6	82.6
NOx**	0.026	0.055	0.055	37.0	78.3	78.3	78.3
VOC**	0.032	0.032	0.032	45.6	45.6	45.6	45.6
CO***	0.13	0.13	0.13	185.1	185.1	185.1	185.1
Hazardous Air Pollutant							
HCl			2.10E-04			2.99E-01	0.30
Antimony	1.80E-07	1.80E-07	1.80E-07	2.56E-04	2.56E-04	2.56E-04	2.56E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	7.97E-04	7.97E-04	7.97E-04	7.97E-04
Beryllium	negl	negl	negl	negl	negl	negl	0E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	5.84E-04	5.84E-04	5.84E-04	5.84E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	7.83E-03	7.83E-03	7.83E-03	7.83E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	3.70E-05	3.70E-05	3.70E-05	3.70E-05
Lead	6.20E-07	1.50E-05	1.50E-05	8.83E-04	2.14E-02	2.14E-02	0.02
Manganese	7.70E-06	7.70E-06	7.70E-06	1.10E-02	1.10E-02	1.10E-02	0.01
Mercury	2.40E-07	2.60E-06	2.60E-06	3.42E-04	3.70E-03	3.70E-03	3.70E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	0.09	0.09	0.09	0.09
Selenium	3.50E-07	3.50E-07	3.50E-07	4.98E-04	4.98E-04	4.98E-04	4.98E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.06	0.06	0.06	0.06
Acetaldehyde			1.30E-03			1.85	1.85
Acrolein			2.60E-05			3.70E-02	0.04
Benzene	3.90E-04	3.90E-04	3.90E-04	0.56	0.56	0.56	0.56
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.34	0.34	0.34	0.34
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	4.41	4.41	4.41	4.41
Hexane	9.20E-04	9.20E-04	9.20E-04	1.31	1.31	1.31	1.31
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.07	0.07	0.07	0.07
MEK			2.00E-05			0.03	0.03
Propionaldehyde			1.30E-04			0.19	0.19
Quinone			1.60E-04			0.23	0.23
Toluene	1.50E-04	2.90E-03	2.90E-03	0.21	4.13	4.13	4.13
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.27	1.25	1.25	1.25
Xylene	2.00E-04	2.00E-04	2.00E-04	0.28	0.28	0.28	0.28

Total HAPs 15.17

Worst Single HAP 4.41 (formaldehyde)

Methodology

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

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

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

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

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

Abbreviations

VOC - Volatile Organic Compounds

HCl = Hydrogen Chloride

SO2 = Sulfur Dioxide

HAP = Hazardous Air Pollutant

PAH = Polyaromatic Hydrocarbon

**Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Slag Processing**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Maximum Annual Slag Usage* = ton/yr % sulfur

	Emission Factor (lb/ton)**	Unlimited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.74	0.0

Methodology

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

** Testing results for 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 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%.

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Maximum Hot Oil Heater Fuel Input Rate =	2.115	MMBtu/hr								
Natural Gas Usage =	19	MMCF/yr								
No. 2 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur						
Used/Waste Oil Usage =	132,339	gal/yr, and	1.00	% sulfur	1.00	% ash	0.100	% chlorine,	0.030	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)				Unlimited/Uncontrolled Potential to Emit (tons/yr)				Worse Case Fuel (tons/yr)	
	Hot Oil Heater				Hot Oil Heater					
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Used/Waste Oil (tons/yr)		
PM	1.9	2.0	7.0	64.0	0.018	0.132	0.463	4.235	4.23	
PM10/PM2.5	7.6	3.3	8.3	51	0.070	0.218	0.549	3.375	3.37	
SO2	0.6	71.0	0.0	147.0	0.006	4.698	0.000	9.727	9.73	
NOx	100.0	20.0	47.0	19.0	0.926	1.323	3.110	1.257	3.11	
VOC	5.5	0.2	0.2	1.0	0.051	0.013	0.013	0.066	0.07	
CO	84.0	5.0	5.0	5.0	0.778	0.331	0.331	0.331	0.78	
Hazardous Air Pollutant										
HCL				6.6				0.44	0.44	
Antimony			5.25E-03	negl			3.47E-04	negl	3.5E-04	
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.1E-01	1.9E-06	3.71E-05	8.73E-05	7.28E-03	7.3E-03	
Beryllium	1.2E-05	4.2E-04	2.78E-05	negl	1.1E-07	2.78E-05	1.84E-06	negl	2.8E-05	
Cadmium	1.1E-03	4.2E-04	3.98E-04	9.3E-03	1.0E-05	2.78E-05	2.63E-05	6.15E-04	6.2E-04	
Chromium	1.4E-03	4.2E-04	8.45E-04	2.0E-02	1.3E-05	2.78E-05	5.59E-05	1.32E-03	1.3E-03	
Cobalt	8.4E-05		6.02E-03	2.1E-04	7.8E-07		3.98E-04	1.39E-05	4.0E-04	
Lead	5.0E-04	1.3E-03	1.51E-03	1.65	4.6E-06	8.34E-05	9.99E-05	1.09E-01	0.11	
Manganese	3.8E-04	8.4E-04	3.00E-03	6.8E-02	3.5E-06	5.56E-05	1.99E-04	4.50E-03	4.5E-03	
Mercury	2.6E-04	4.2E-04	1.13E-04		2.4E-06	2.78E-05	7.48E-06		2.8E-05	
Nickel	2.1E-03	4.2E-04	8.45E-02	1.1E-02	1.9E-05	2.78E-05	5.59E-03	7.28E-04	5.6E-03	
Selenium	2.4E-05	2.1E-03	6.83E-04	negl	2.2E-07	1.39E-04	4.52E-05	negl	1.4E-04	
1,1,1-Trichloroethane			2.36E-04				1.56E-05		1.6E-05	
Benzene	2.1E-03		2.14E-04		1.9E-05		1.42E-05		1.9E-05	
Bis(2-ethylhexyl)phthalate				2.2E-03				1.46E-04	1.5E-04	
Dichlorobenzene	1.2E-03			8.0E-07	1.1E-05			5.29E-08	1.1E-05	
Ethylbenzene			6.36E-05				4.21E-06		4.2E-06	
Formaldehyde	7.5E-02	6.1E-02	3.30E-02		6.9E-04	4.04E-03	2.18E-03		4.0E-03	
Hexane	1.8E+00				0.02				0.02	
Phenol				2.4E-03				1.59E-04	1.6E-04	
Toluene	3.4E-03		6.20E-03		3.1E-05		4.10E-04		4.1E-04	
Total PAH Haps	negl		1.13E-03	3.9E-02	negl		7.48E-05	2.59E-03	2.6E-03	
Polycyclic Organic Matter		3.30E-03				2.18E-04			2.2E-04	
Xylene			1.09E-04	3.99E-02			7.21E-06	2.64E-03	2.6E-03	
Total HAPs =					1.7E-02	4.7E-03	9.2E-03	1.3E-01	0.59	
					Worst Single HAP				0.44	(HCL)

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 and No.4 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

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

**Appendix A.1: Emissions Calculations
Inert Gas Generator
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
Unlimited Emissions**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Maximum Inert Gas Generator Fuel Input Rate = 0.0228 MMBtu/hr
 Natural Gas Usage = 0.1997 MMCF/yr

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)	Unlimited/Uncontrolled Potential to Emit (tons/yr)	
	Natural Gas (lb/MMCF)	Natural Gas (tons/yr)	Worse Case Fuel (tons/yr)
PM	1.9	1.90E-04	1.90E-04
PM10/PM2.5	7.6	7.59E-04	7.59E-04
SO2	0.6	5.99E-05	5.99E-05
NOx	100	9.99E-03	9.99E-03
VOC	5.5	5.49E-04	5.49E-04
CO	84	8.39E-03	8.39E-03
Hazardous Air Pollutant			
Arsenic	2.0E-04	2.0E-08	2.0E-08
Beryllium	1.2E-05	1.2E-09	1.2E-09
Cadmium	1.1E-03	1.1E-07	1.1E-07
Chromium	1.4E-03	1.4E-07	1.4E-07
Cobalt	8.4E-05	8.4E-09	8.4E-09
Lead	5.0E-04	5.0E-08	5.0E-08
Manganese	3.8E-04	3.8E-08	3.8E-08
Mercury	2.6E-04	2.6E-08	2.6E-08
Nickel	2.1E-03	2.1E-07	2.1E-07
Selenium	2.4E-05	2.4E-09	2.4E-09
Benzene	2.1E-03	2.1E-07	2.1E-07
Dichlorobenzene	1.2E-03	1.2E-07	1.2E-07
Ethylbenzene			0
Formaldehyde	7.5E-02	7.5E-06	7.5E-06
Hexane	1.8E+00	0.00	1.8E-04
Phenol			0
Toluene	3.4E-03	3.4E-07	3.4E-07
Total PAH Haps	negl	negl	negl
Polycyclic Organic Matter			0
Xylene			0

Total HAPs 1.89E-04
Worst Single HAP 1.80E-04 (hexane)

Methodology

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [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

Abbreviations

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

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	2,847,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.74	0.83	NA	1.58
Organic PM	3.4E-04	2.5E-04	NA	0.49	0.361	NA	0.85
TOC	0.004	0.012	0.001	5.92	17.35	1.566	24.8
CO	0.001	0.001	3.5E-04	1.92	1.680	0.501	4.10

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

PM/HAPs	0.035	0.041	0	0.075
VOC/HAPs	0.087	0.221	0.023	0.331
non-VOC/HAPs	4.6E-04	4.7E-05	1.2E-04	6.2E-04
non-VOC/non-HAPs	0.43	0.25	0.11	0.79

Total VOCs	5.57	17.35	1.5	24.4
Total HAPs	0.12	0.26	0.023	0.41
	Worst Single HAP			0.126
				(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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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%	1.3E-03	1.7E-03	NA	3.0E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.4E-04	5.1E-05	NA	1.9E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	3.4E-04	4.7E-04	NA	8.1E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	9.2E-05	2.0E-04	NA	2.9E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	3.7E-05	0	NA	3.7E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.1E-05	0	NA	1.1E-05
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	9.2E-06	0	NA	9.2E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.1E-05	0	NA	1.1E-05
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	3.8E-05	3.4E-05	NA	7.2E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	5.0E-04	7.6E-04	NA	1.3E-03
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	1.8E-06	0	NA	1.8E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	2.4E-04		NA	2.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	3.7E-03	3.7E-03	NA	7.4E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	2.3E-06	0	NA	2.3E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.2E-02	1.9E-02	NA	0.031
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	6.1E-03	6.6E-03	NA	1.3E-02
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.1E-04	1.1E-04	NA	2.2E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	3.9E-03	6.5E-03	NA	1.0E-02
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	7.3E-04	1.6E-03	NA	2.3E-03
Total PAH HAPs							0.029	0.041	NA	0.069
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	5.7E-03	0	0	5.7E-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

POM = Polycyclic Organic Matter

HAP = Hazardous Air Pollutant

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

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	5.57	17.35	1.47	24.38
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	3.8E-01	4.5E-02	1.0E-01	0.532
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	2.7E-03	9.5E-03	7.2E-04	0.013
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	4.2E-02	1.9E-01	1.1E-02	0.244
Total non-VOC/non-HAPS					7.30%	1.40%	0.432	0.243	0.114	0.79
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	3.1E-03	5.6E-03	8.1E-04	9.4E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	5.7E-04	8.5E-04	1.5E-04	1.6E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	2.9E-03	6.8E-03	7.7E-04	1.0E-02
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	7.7E-04	2.8E-03	2.0E-04	3.7E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	1.2E-05	6.9E-04	3.3E-06	7.1E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	8.9E-04	4.0E-03	2.3E-04	5.1E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	6.5E-03	0	1.7E-03	8.2E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	1.7E-02	6.6E-03	4.4E-03	0.028
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	5.2E-03	1.2E-01	1.4E-03	0.126
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	8.9E-03	1.7E-02	2.3E-03	0.029
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.1E-04	5.4E-05	2.8E-05	1.9E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	4.7E-05	0	4.7E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	4.3E-04	9.4E-04	1.1E-04	1.5E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	4.6E-04	0	1.2E-04	5.8E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	1.2E-02	1.1E-02	3.3E-03	0.026
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	7.7E-05	0	2.0E-05	9.7E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	2.4E-02	3.5E-02	6.4E-03	0.065
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	4.7E-03	9.9E-03	1.3E-03	1.6E-02
Total volatile organic HAPs					1.50%	1.30%	0.089	0.226	0.023	0.338

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	1.50	0.824	0.288
Limestone	0	0	0	0	0
RAP	0.5	0.58	1.50	0.158	0.055
Stone & Gravel	1.6	1.85	1.50	0.507	0.177
Slag	0	0	0	0	0
Totals				1.49	0.52

Methodology

PM2.5 = PM10

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.

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

RAP - recycled asphalt pavement

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

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

$$E_f = k \cdot (0.0032)^{1.3} \cdot (U/10)^{1.4} / (M/100)^{1.4}$$

where: E_f = Emission factor (lb/ton)

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

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

Maximum Annual Asphalt Production	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	2,704,650	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	3.07	1.45	0.22
Front-end loader dumping of materials into feeder bins	3.07	1.45	0.22
Conveyor dropping material into dryer/mixer or batch tower	3.07	1.45	0.22
Total (tons/yr)	9.20	4.35	0.66

Methodology

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

Material Screening and Conveying (AP-42 Section 11.19.2)

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	7.30	3.25
Screening	0.025	0.0087	33.81	11.77
Conveying	0.003	0.0011	4.06	1.49
Unlimited Potential to Emit (tons/yr) =			45.17	16.50

Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2
 *Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
 **Assumes PM10 = PM2.5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 μ m)
 PM2.5 = Particulate matter (< 2.5 μ m)
 PTE = Potential to Emit

Appendix A.1: Unlimited Emissions Calculations
Unpaved Roads

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Unpaved Roads at Industrial Site

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

Maximum Annual Asphalt Production =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,704,650	tons/yr
Maximum Asphalt Cement/Binder Throughput =	142,350	tons/yr
Maximum No. 2 Fuel Oil Usage =	7,508,571	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	1.2E+05	4.8E+06	300	0.057	6860.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.2E+05	2.1E+06	300	0.057	6860.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	4.0E+03	1.9E+05	300	0.057	224.7
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	4.0E+03	4.7E+04	300	0.057	224.7
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	7.9E+02	3.5E+04	300	0.057	45.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	7.9E+02	9.5E+03	300	0.057	45.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	6.4E+05	1.2E+07	300	0.057	36588.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	6.4E+05	9.7E+06	300	0.057	36588.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.2E+05	4.9E+06	300	0.057	6740.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.2E+05	2.0E+06	300	0.057	6740.1
Total					1.8E+06	3.6E+07			1.0E+05

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

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

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

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

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f =	6.10	1.55	0.16	lb/mile
Mitigated Emission Factor, E_{ext} =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	20.91	5.33	0.53	13.75	3.50	0.35	6.87	1.75	0.18
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	20.91	5.33	0.53	13.75	3.50	0.35	6.87	1.75	0.18
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.685	0.175	0.02	0.450	0.115	0.01	0.225	0.057	0.01
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.685	0.175	0.02	0.450	0.115	0.01	0.225	0.057	0.01
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.137	0.035	0.00	0.090	0.023	0.00	0.045	0.012	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.137	0.035	0.00	0.090	0.023	0.00	0.045	0.012	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	111.51	28.42	2.84	73.32	18.69	1.87	36.66	9.34	0.93
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	111.51	28.42	2.84	73.32	18.69	1.87	36.66	9.34	0.93
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	20.54	5.24	0.52	13.51	3.44	0.34	6.75	1.72	0.17
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	20.54	5.24	0.52	13.51	3.44	0.34	6.75	1.72	0.17
Totals		307.55	78.38	7.84	202.23	51.54	5.15	101.11	25.77	2.58

Methodology

PM2.5 = PM10
 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: Unlimited Emissions Calculations
Paved Roads

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Paved Roads at Industrial Site

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

Maximum Annual Asphalt Production = 2,847,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 2,704,650 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 142,350 tons/yr
 Maximum No. 2 Fuel Oil Usage = 7,508,571 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	1.2E+05	4.8E+06	300	0.057	6860.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.2E+05	2.1E+06	300	0.057	6860.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	4.0E+03	1.9E+05	300	0.057	224.7
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	4.0E+03	4.7E+04	300	0.057	224.7
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	7.9E+02	3.5E+04	300	0.057	45.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	7.9E+02	9.5E+03	300	0.057	45.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	6.4E+05	1.2E+07	300	0.057	36588.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	6.4E+05	9.7E+06	300	0.057	36588.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.2E+05	4.9E+06	300	0.057	6740.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.2E+05	2.0E+06	300	0.057	6740.1
Total					1.8E+06	3.6E+07			1.0E+05

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

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

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

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

tons = average vehicle weight (provided by source)

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

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

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

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

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

	PM	PM10	PM2.5
Unmitigated Emission Factor, E_f =	0.66	0.13	0.02
Mitigated Emission Factor, E_{ext} =	0.60	0.12	0.02
Dust Control Efficiency =	50%	50%	50%

lb/mile

lb/mile

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

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	2.26	0.44	0.06	2.06	0.40	0.06	1.03	0.20	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	2.26	0.44	0.06	2.06	0.40	0.06	1.03	0.20	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.074	0.014	2.1E-03	0.068	0.013	1.9E-03	0.034	6.6E-03	9.7E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.074	0.014	2.1E-03	0.068	0.013	1.9E-03	0.034	6.6E-03	9.7E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.5E-02	2.9E-03	4.3E-04	1.4E-02	2.6E-03	3.9E-04	6.8E-03	1.3E-03	1.9E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.5E-02	2.9E-03	4.3E-04	1.4E-02	2.6E-03	3.9E-04	6.8E-03	1.3E-03	1.9E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	12.03	2.34	0.35	11.00	2.14	0.32	5.50	1.07	0.16
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	12.03	2.34	0.35	11.00	2.14	0.32	5.50	1.07	0.16
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	2.22	0.43	0.06	2.03	0.39	0.06	1.01	0.20	0.03
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	2.22	0.43	0.06	2.03	0.39	0.06	1.01	0.20	0.03
Totals		33.19	6.46	0.95	30.35	5.90	0.87	15.18	2.95	0.44

Methodology

PM2.5 = PM10

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Maximum Annual Asphalt Production =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Asphalt Cement/Binder Throughput =	142,350	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%	36014.6	34213.8
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	40712.1	28498.5
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	28470.0	7117.5
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	21352.5	9907.6
Other asphalt with solvent binder	25.9%	2.5%	36868.7	921.7
Worst Case PTE of VOC =				34213.8

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) =	8924.23
PTE of Single HAP (tons/yr) =	3079.24 Xylenes

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

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

Methodology

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds PTE = Potential to Emit

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

$$\begin{aligned} \text{Gasoline Throughput} &= 40.0 \text{ gallons/day} \\ &= 14.6 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.002
Tank breathing and emptying	1.0	0.01
Vehicle refueling (displaced losses - controlled)	1.1	0.01
Spillage	0.7	0.01
Total		0.02

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) =	0.01	
Limited PTE of Single HAP (tons/yr) =	0.002	Xylenes

Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Entire Source

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Asphalt Plant Limitations

Maximum Hourly Asphalt Production =	325	ton/hr							
Annual Asphalt Production Limitation =	500,000	ton/yr							
Slag Usage Limitation =	0	ton/yr		0	% sulfur				
Natural Gas Limitation =	1,028	MMCF/yr							
No. 2 Fuel Oil Limitation =	2,656,394	gal/yr, and		0.50	% sulfur				
No. 4 Fuel Oil Limitation =	2,514,719	gal/yr, and		0.50	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and		0	% sulfur				
Propane Limitation =	0	gal/yr, and		0	gr/100 ft3 sulfur				
Butane Limitation =	0	gal/yr, and		0	gr/100 ft3 sulfur				
Used/Waste Oil Limitation =	1,283,020	gal/yr, and		1.00	% sulfur	1.00	% ash	0.100	% chlorine, 0.030 % lead
PM Dryer/Mixer Limitation =	0.879	lb/ton of asphalt production							
PM10 Dryer/Mixer Limitation =	0.359	lb/ton of asphalt production							
PM2.5 Dryer/Mixer Limitation =	0.378	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							
Slag SO2 Dryer/Mixer Limitation =	0	lb/ton of slag processed							
Cold Mix Asphalt VOC Usage Limitation =	67.60	tons/yr							
HCl Limitation =	6.6	lb/kgal							

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)									
	Criteria Pollutants							Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP	
Ducted Emissions										
Dryer Fuel Combustion (worst case)	41.06	32.72	32.72	94.30	97.68	2.83	43.18	6.60	4.23	(hydrogen chloride)
Dryer/Mixer (Process)	219.78	89.79	94.52	14.50	13.75	8.00	32.50	2.66	0.78	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion (worst case)	0.13	0.22	0.22	4.70	1.32	0.05	0.78	0.59	0.44	(hydrogen chloride)
Inert Gas Generator Fuel Combustion	1.90E-04	7.59E-04	7.59E-04	5.99E-05	0.01	5.49E-04	0.01	1.89E-04	1.80E-04	(hexane)
Worst Case Emissions*	219.91	90.01	94.74	99.00	99.00	8.05	43.96	7.19	4.23	(hydrogen chloride)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	0.28	0.28	0.28	0	0	4.28	0.72	0.07	0.02	(formaldehyde)
Material Storage Piles	1.49	0.52	0.52	0	0	0	0	0	0	
Material Processing and Handling	1.62	0.76	0.12	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	7.93	2.90	2.90	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	17.78	4.53	0.45	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	67.60	0	17.63	6.08	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0.01	0.002	(xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	negl	
Total Fugitive Emissions	29.09	8.99	4.26	0	0	71.91	0.72	17.71	6.09	(xylenes)
Totals Limited/Controlled Emissions	249.00	99.00	99.00	99.00	99.00	79.96	44.68	24.90	6.09	(xylenes)

negl = negligible

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

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion Fuel component percentages provided by the source.

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Production and Fuel Limitations

Maximum Hourly Asphalt Production	325	ton/hr
Annual Asphalt Production Limitation	500,000	ton/yr
Natural Gas Limitation	1,028	MMCF/yr
No. 2 Fuel Oil Limitation	2,656,394	gal/yr, and
No. 4 Fuel Oil Limitation	2,514,719	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Limitation	0	gal/yr, and
Propane Limitation	0	gal/yr, and
Butane Limitation	0	gal/yr, and
Used/Waste Oil Limitation	1,283,020	gal/yr, and

	0.50	% sulfur
	0.50	% sulfur
	0	% sulfur
	0	gr/100 ft3 sulfur
	0	gr/100 ft3 sulfur
	1.00	% sulfur
	1.00	% ash
	0.100	% chlorine
	0.030	% lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)							Limited Potential to Emit (tons/yr)							
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)
PM	1.9	2.0	7.0	3.22	0.5	0.6	64.0	0.98	2.66	8.80	0	0	0	41.06	41.06
PM10	7.6	3.3	8.3	4.72	0.5	0.6	51.0	3.91	4.38	10.44	0	0	0	32.72	32.72
SO2	0.6	71.0	75.0	0	0	0	147.0	0.31	94.30	94.30	0	0	0	94.30	94.30
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	97.68	31.88	59.10	0	0	0	12.19	97.68
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.83	0.27	0.25	0	0	0	0.64	2.83
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	43.18	6.64	6.29	0	0	0	3.21	43.18
Hazardous Air Pollutant															
HCl							6.6							4.23	4.23
Antimony			5.25E-03	5.25E-03			negl			6.60E-03	0			negl	6.6E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	1.0E-04	7.44E-04	1.66E-03	0			7.06E-02	0.07
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	6.2E-06	5.58E-04	3.50E-05	0			negl	5.6E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	5.7E-04	5.58E-04	5.00E-04	0			5.97E-03	6.0E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	7.2E-04	5.58E-04	1.06E-03	0			1.28E-02	0.01
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	4.3E-05		7.57E-03	0			1.35E-04	7.6E-03
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			1.65	2.6E-04	1.67E-03	1.90E-03	0			1.1E+00	1.06
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	2.0E-04	1.12E-03	3.77E-03	0			4.36E-02	0.04
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				1.3E-04	5.58E-04	1.42E-04	0				5.6E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	1.1E-03	5.58E-04	1.06E-01	0			7.06E-03	0.11
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.2E-05	2.79E-03	8.59E-04	0			negl	2.8E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04						2.97E-04	0				3.0E-04
1,3-Butadiene															0
Acetaldehyde															0
Acrolein															0
Benzene	2.1E-03		2.14E-04	2.14E-04				1.1E-03		2.69E-04	0				1.1E-03
Bis(2-ethylhexyl)phthalate							2.2E-03							1.41E-03	1.4E-03
Dichlorobenzene	1.2E-03						8.0E-07	6.2E-04						5.13E-07	8.2E-04
Ethylbenzene			6.36E-05	6.36E-05						8.00E-05	0				0.09
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				3.9E-02	8.10E-02	4.15E-02	0				0.93
Hexane	1.8E+00							0.93							0.93
Phenol							2.4E-03							1.54E-03	1.5E-03
Toluene	3.4E-03		6.20E-03	6.20E-03				1.7E-03		7.80E-03	0				7.8E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		1.42E-03	0			2.51E-02	0.03
Polycyclic Organic Matter		3.30E-03							4.38E-03						4.4E-03
Xylene			1.09E-04	1.09E-04						1.37E-04	0				1.4E-04
Total HAPs								0.97	0.09	0.18	0.00	0	0	5.46	6.60
														Worst Single HAP	4.23 (HCL)

Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
 Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
- Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

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

Abbreviations

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

Appendix A.2: Limited Emissions Summary
Dryer/Mixer

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Maximum Hourly Asphalt Production =	325	ton/hr
Annual Asphalt Production Limitation =	500,000	ton/yr
PM Dryer/Mixer Limitation =	0.879	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.359	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.378	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton) 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)			Worse Case PTE
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.879	0.879	0.879	219.8	219.8	219.8	219.8
PM10*	0.359	0.359	0.359	89.8	89.8	89.8	89.8
PM2.5*	0.378	0.378	0.378	94.5	94.5	94.5	94.5
SO2**	0.003	0.011	0.058	0.9	2.8	14.5	14.5
NOx**	0.026	0.055	0.055	6.5	13.8	13.8	13.8
VOC**	0.032	0.032	0.032	8.0	8.0	8.0	8.0
CO***	0.130	0.130	0.130	32.5	32.5	32.5	32.5
Hazardous Air Pollutant							
HCl			2.10E-04			0.05	0.05
Antimony	1.80E-07	1.80E-07	1.80E-07	4.50E-05	4.50E-05	4.50E-05	4.50E-05
Arsenic	5.60E-07	5.60E-07	5.60E-07	1.40E-04	1.40E-04	1.40E-04	1.40E-04
Beryllium	negl	negl	negl	negl	negl	negl	0
Cadmium	4.10E-07	4.10E-07	4.10E-07	1.03E-04	1.03E-04	1.03E-04	1.03E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	1.38E-03	1.38E-03	1.38E-03	1.38E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	6.50E-06	6.50E-06	6.50E-06	6.50E-06
Lead	6.20E-07	1.50E-05	1.50E-05	1.55E-04	3.75E-03	3.75E-03	0.00
Manganese	7.70E-06	7.70E-06	7.70E-06	1.93E-03	1.93E-03	1.93E-03	1.93E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	6.00E-05	6.50E-04	6.50E-04	6.50E-04
Nickel	6.30E-05	6.30E-05	6.30E-05	1.58E-02	1.58E-02	1.58E-02	0.02
Selenium	3.50E-07	3.50E-07	3.50E-07	8.75E-05	8.75E-05	8.75E-05	8.75E-05
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	1.00E-02	1.00E-02	1.00E-02	0.01
Acetaldehyde			1.30E-03			0.33	0.33
Acrolein			2.60E-05			6.50E-03	0.01
Benzene	3.90E-04	3.90E-04	3.90E-04	0.10	0.10	0.10	0.10
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.06	0.06	0.06	0.06
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	0.78	0.78	0.78	0.78
Hexane	9.20E-04	9.20E-04	9.20E-04	0.23	0.23	0.23	0.23
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.01	0.01	0.01	0.01
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.03	0.03
Quinone			1.60E-04			0.04	0.04
Toluene	1.50E-04	2.90E-03	2.90E-03	0.04	0.73	0.73	0.73
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.05	0.22	0.22	0.22
Xylene	2.00E-04	2.00E-04	2.00E-04	0.05	0.05	0.05	0.05
Total HAPs							2.66
Worst Single HAP							0.78 (formaldehyde)

Methodology

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

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

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

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

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

Abbreviations

VOC - Volatile Organic Compounds

HCl = Hydrogen Chloride

SO2 = Sulfur Dioxide

HAP = Hazardous Air Pollutant

PAH = Polycyclic Aromatic Hydrocarbon

**Appendix A.2: Limited Emissions Summary
Dryer/Mixer Slag Processing**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

Slag Usage Limitation =

0

 ton/yr
 SO2 Slag Limitation =

0.000

 lb/ton of slag processed

0.00

 % sulfur

	Emission Factor or Limitation (lb/ton)*	Limited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.000	0.0

Methodology

* Testing results for 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 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%.

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

Abbreviations

SO2 = Sulfur Dioxide

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

Company Name: J.H. Rudolph & Company, Inc.
Address City IN Zip: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: June 24, 2009

Maximum Hot Oil Heater Fuel Input Rate =	2.115	MMBtu/hr						
Natural Gas Usage =	19	MMCF/yr						
No. 2 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur				
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.50	% sulfur				
Used/Waste Oil Usage =	132,339	gal/yr, and	1.00	% sulfur	1.00	% ash	0.100	% chlorine,
								0.030
								% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)				Unlimited/Uncontrolled Potential to Emit (tons/yr)				Worse Case Fuel (tons/yr)
	Hot Oil Heater				Hot Oil Heater				
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Re-refined Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Re-refined Waste Oil (tons/yr)	
PM	1.9	2.0	7.0	64.0	0.018	0.132	0.463	4.235	0.13
PM10/PM2.5	7.6	3.3	8.3	51.0	0.070	0.218	0.549	3.375	0.22
SO2	0.6	71.0	75.0	147.0	0.006	4.698	4.963	9.727	4.70
NOx	100	20.0	47.0	19.0	0.926	1.323	3.110	1.257	1.32
VOC	5.5	0.20	0.20	1.0	0.051	0.013	0.013	0.066	0.05
CO	84	5.0	5.0	5.0	0.778	0.331	0.331	0.331	0.78
Hazardous Air Pollutant									
HCL				6.6				0.44	0.44
Antimony			5.25E-03	negl			3.47E-04	negl	3.47E-04
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.1E-01	1.9E-06	3.71E-05	8.73E-05	7.28E-03	7.28E-03
Beryllium	1.2E-05	4.2E-04	2.78E-05	negl	1.1E-07	2.78E-05	1.84E-06	negl	2.78E-05
Cadmium	1.1E-03	4.2E-04	3.98E-04	9.3E-03	1.0E-05	2.78E-05	2.63E-05	6.15E-04	6.15E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	2.0E-02	1.3E-05	2.78E-05	5.59E-05	1.32E-03	1.32E-03
Cobalt	8.4E-05		6.02E-03	2.1E-04	7.8E-07		3.98E-04	1.39E-05	3.98E-04
Lead	5.0E-04	1.3E-03	1.51E-03	1.65	4.6E-06	8.34E-05	9.99E-05	1.09E-01	0.11
Manganese	3.8E-04	8.4E-04	3.00E-03	6.8E-02	3.5E-06	5.56E-05	1.99E-04	4.50E-03	4.50E-03
Mercury	2.6E-04	4.2E-04	1.13E-04		2.4E-06	2.78E-05	7.48E-06		2.78E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	1.1E-02	1.9E-05	2.78E-05	5.59E-03	7.28E-04	5.59E-03
Selenium	2.4E-05	2.1E-03	6.83E-04	negl	2.2E-07	1.39E-04	4.52E-05	negl	1.39E-04
1,1,1-Trichloroethane			2.36E-04				1.56E-05		1.56E-05
Benzene	2.1E-03		2.14E-04		1.9E-05		1.42E-05		1.95E-05
Bis(2-ethylhexyl)phthalate				2.2E-03				1.46E-04	1.46E-04
Dichlorobenzene	1.2E-03			8.0E-07	1.1E-05			5.29E-08	1.11E-05
Ethylbenzene			6.36E-05				4.21E-06		4.21E-06
Formaldehyde	7.5E-02	6.10E-02	3.30E-02		6.9E-04	4.04E-03	2.18E-03		4.04E-03
Hexane	1.80				1.7E-02				0.02
Phenol				2.4E-03				1.59E-04	1.59E-04
Toluene	3.4E-03		6.20E-03		3.1E-05		4.10E-04		4.10E-04
Total PAH Haps	negl		1.13E-03	3.9E-02	negl		7.48E-05	2.59E-03	2.59E-03
Polycyclic Organic Matter		3.30E-03				2.18E-04			2.18E-04
Xylene			1.09E-04	3.99E-02			7.21E-06	2.64E-03	2.64E-03
Total HAPs					1.7E-02	4.7E-03	9.2E-03	1.3E-01	0.59

Worst Single HAP 0.44 (HCL)

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 and No.4 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 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	NOx = Nitrous Oxides	HAP = Hazardous Air Pollutant
PM10 = Particulate Matter (<10 um)	VOC = Volatile Organic Compounds	HCl = Hydrogen Chloride
SO2 = Sulfur Dioxide	CO = Carbon Monoxide	PAH = Polyaromatic Hydrocarbon

Appendix A.2: Limited Emissions Summary
Inert Gas Generator
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: J.H. Rudolph & Company, Inc.
Address City IN Zip: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: June 24, 2009

Maximum Inert Gas Generator Fuel Input Rate = 0.0228 MMBtu/hr
 Natural Gas Usage = 0.20 MMCF/yr

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)	Unlimited/ Uncontrolled Potential to Emit (tons/yr)	Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	Natural Gas (tons/yr)	
PM	1.9	1.90E-04	1.90E-04
PM10/PM2.5	7.6	7.59E-04	7.59E-04
SO2	0.6	5.99E-05	5.99E-05
NOx	100	9.99E-03	0.01
VOC	5.5	5.49E-04	5.49E-04
CO	84	8.39E-03	0.01
Hazardous Air Pollutant			
Arsenic	2.0E-04	2.0E-08	2.0E-08
Beryllium	1.2E-05	1.2E-09	1.2E-09
Cadmium	1.1E-03	1.1E-07	1.1E-07
Chromium	1.4E-03	1.4E-07	1.4E-07
Cobalt	8.4E-05	8.4E-09	8.4E-09
Lead	5.0E-04	5.0E-08	5.0E-08
Manganese	3.8E-04	3.8E-08	3.8E-08
Mercury	2.6E-04	2.6E-08	2.6E-08
Nickel	2.1E-03	2.1E-07	2.1E-07
Selenium	2.4E-05	2.4E-09	2.4E-09
Benzene	2.1E-03	2.1E-07	2.1E-07
Dichlorobenzene	1.2E-03	1.2E-07	1.2E-07
Ethylbenzene	0	0	0
Formaldehyde	7.5E-02	7.5E-06	7.49E-06
Hexane	1.8E+00	0.00	1.80E-04
Phenol	0	0	0
Toluene	3.4E-03	3.4E-07	3.4E-07
Total PAH Haps	negl	negl	0
Polycyclic Organic Matter	0	0	0
Total HAPs			1.89E-04
Worst Single HAP			1.80E-04 (hexane)

Methodology

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

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

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC - Volatile Organic Compounds

CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride
 PAH = Polyaromatic Hydrocarbon

Appendix A.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

The following calculations determine the limited fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Annual Asphalt Production Limitation =	500,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.13	0.15	NA	0.28
Organic PM	3.4E-04	2.5E-04	NA	0.09	0.063	NA	0.15
TOC	0.004	0.012	0.001	1.04	3.05	0.275	4.4
CO	0.001	0.001	3.5E-04	0.34	0.295	0.088	0.72

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

PM/HAPs	0.006	0.007	0	0.013
VOC/HAPs	0.015	0.039	0.004	0.058
non-VOC/HAPs	8.0E-05	8.2E-06	2.1E-05	1.1E-04
non-VOC/non-HAPs	0.08	0.04	0.02	0.14
Total VOCs	0.98	3.05	0.3	4.3
Total HAPs	0.02	0.05	0.004	0.07
Worst Single HAP				0.022 (formaldehyde)

Methodology

The asphalt temperature and volatility factor were provided by the source.

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14)::

$$\text{Total PM/PM10 Ef} = 0.000181 + 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$$

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

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

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

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

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

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

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

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

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

Abbreviations

TOC = Total Organic Compounds	PM2.5 = Particulate Matter (<2.5 um)
CO = Carbon Monoxide	HAP = Hazardous Air Pollutant
PM = Particulate Matter	VOC = Volatile Organic Compound
PM10 = Particulate Matter (<10 um)	

Appendix A.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)				
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total	
PAH HAPs											
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	2.2E-04	3.0E-04	NA	5.2E-04	
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	2.4E-05	8.9E-06	NA	3.3E-05	
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	6.0E-05	8.3E-05	NA	1.4E-04	
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.6E-05	3.6E-05	NA	5.2E-05	
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	6.5E-06	0	NA	6.5E-06	
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.9E-06	0	NA	1.9E-06	
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.6E-06	0	NA	1.6E-06	
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	2.0E-06	0	NA	2.0E-06	
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	6.6E-06	6.0E-06	NA	1.3E-05	
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	8.8E-05	1.3E-04	NA	2.2E-04	
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	3.2E-07	0	NA	3.2E-07	
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	4.3E-05	9.5E-05	NA	1.4E-04	
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	6.6E-04	6.4E-04	NA	1.3E-03	
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	4.0E-07	0	NA	4.0E-07	
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	2.0E-03	3.3E-03	NA	0.005	
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	1.1E-03	1.2E-03	NA	2.2E-03	
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.9E-05	1.9E-05	NA	3.8E-05	
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	6.9E-04	1.1E-03	NA	1.8E-03	
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	1.3E-04	2.8E-04	NA	4.1E-04	
Total PAH HAPs							0.005	0.007	NA	0.012	
Other semi-volatile HAPs											
Phenol		PM/HAP	---	Organic PM	1.18%	0	1.0E-03	0	0	1.0E-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: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	0.98	3.05	0.26	4.28
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	6.8E-02	7.9E-03	1.8E-02	0.093
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	4.8E-04	1.7E-03	1.3E-04	0.002
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	7.4E-03	3.4E-02	2.0E-03	0.043
Total non-VOC/non-HAPS					7.30%	1.40%	0.076	0.043	0.020	0.14
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	5.4E-04	9.7E-04	1.4E-04	1.7E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	1.0E-04	1.5E-04	2.6E-05	2.8E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	5.1E-04	1.2E-03	1.3E-04	1.8E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	1.4E-04	4.9E-04	3.6E-05	6.6E-04
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	2.2E-06	1.2E-04	5.8E-07	1.2E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.6E-04	7.0E-04	4.1E-05	9.0E-04
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	1.1E-03	0	3.0E-04	1.4E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	2.9E-03	1.2E-03	7.7E-04	0.005
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	9.1E-04	2.1E-02	2.4E-04	0.022
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.6E-03	3.0E-03	4.1E-04	0.005
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.9E-05	9.4E-06	5.0E-06	3.3E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	8.2E-06	0	8.2E-06
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	7.6E-05	1.6E-04	2.0E-05	2.6E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	8.0E-05	0	2.1E-05	1.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	2.2E-03	1.9E-03	5.8E-04	0.005
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	1.4E-05	0	3.6E-06	1.7E-05
m/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	4.3E-03	6.1E-03	1.1E-03	0.011
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	8.3E-04	1.7E-03	2.2E-04	2.8E-03
Total volatile organic HAPs					1.50%	1.30%	0.016	0.040	0.004	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.2: Limited Emissions Summary
Material Storage Piles
Fugitive Particulate Emissions**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

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

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

where E_f = emission factor (lb/acre/day)
 s = silt content (wt %)
 p = days of rain greater than or equal to 0.01 inches
 f = % 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	1.50	0.824	0.288
Limestone	0	0	0	0	0
RAP	0.5	0.58	1.50	0.158	0.055
Gravel	1.6	1.85	1.50	0.507	0.177
Slag	0	0	0	0	0
Totals				1.49	0.52

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.

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PM2.5 = PM10

PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Material Processing, Handling, Crushing, Screening, and Conveying
Fugitive Particulate Emissions

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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

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

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

where: 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 =	500,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	475,000	tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	0.54	0.25	0.04
Front-end loader dumping of materials into feeder bins	0.54	0.25	0.04
Conveyor dropping material into dryer/mixer or batch tower	0.54	0.25	0.04
Total (tons/yr)	1.62	0.76	0.12

Methodology

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

Material Screening and Conveying (AP-42 Section 19.2.2)

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	1.28	0.57
Screening	0.025	0.0087	5.94	2.07
Conveying	0.003	0.0011	0.71	0.26
Limited Potential to Emit (tons/yr) =			7.93	2.90

Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Limited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2
 *Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
 **Assumes PM10 = PM2.5

Abbreviations

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

Appendix A.2: Limited Emissions Summary
Unpaved Roads
Fugitive Particulate Emissions

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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 = 500,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 475,000 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 25,000 tons/yr
 No. 2 Fuel Oil Limitation = 2,656,394 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	2.1E+04	8.4E+05	300	0.057	1204.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	2.1E+04	3.6E+05	300	0.057	1204.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	6.9E+02	3.3E+04	300	0.057	39.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	6.9E+02	8.3E+03	300	0.057	39.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.8E+02	1.2E+04	300	0.057	15.9
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.8E+02	3.4E+03	300	0.057	15.9
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	1.1E+05	2.2E+06	300	0.057	6425.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	1.1E+05	1.7E+06	300	0.057	6425.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	2.1E+04	8.5E+05	300	0.057	1183.7
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	2.1E+04	3.5E+05	300	0.057	1183.7
Total					3.1E+05	6.3E+06			17,739.65

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

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

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

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

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f =	6.10	1.55	0.16	lb/mile
Mitigated Emission Factor, E_{ext} =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	3.67	0.94	0.09	2.41	0.62	0.06	1.21	0.31	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	3.67	0.94	0.09	2.41	0.62	0.06	1.21	0.31	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.120	0.031	0.00	0.079	0.020	2.0E-03	0.040	0.010	1.0E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.120	0.031	0.00	0.079	0.020	2.0E-03	0.040	0.010	1.0E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.049	0.012	1.2E-03	0.032	0.008	8.1E-04	0.016	0.004	4.1E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.049	0.012	1.2E-03	0.032	0.008	8.1E-04	0.016	0.004	4.1E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	19.59	4.99	0.50	12.88	3.28	0.33	6.44	1.64	0.16
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	19.59	4.99	0.50	12.88	3.28	0.33	6.44	1.64	0.16
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	3.61	0.92	0.09	2.37	0.60	0.06	1.19	0.30	0.03
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	3.61	0.92	0.09	2.37	0.60	0.06	1.19	0.30	0.03
Totals		54.07	13.78	1.38	35.55	9.06	0.91	17.78	4.53	0.45

Methodology

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

Abbreviations

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

Appendix A.2: Limited Emissions Summary

**Paved Roads
Fugitive Particulate Emissions**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

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 =	500,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	475,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	25,000	tons/yr
No. 2 Fuel Oil Limitation =	2,656,394	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	2.1E+04	8.4E+05	300	0.057	1204.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	2.1E+04	3.6E+05	300	0.057	1204.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	6.9E+02	3.3E+04	300	0.057	39.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	6.9E+02	8.3E+03	300	0.057	39.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.8E+02	1.2E+04	300	0.057	15.9
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.8E+02	3.4E+03	300	0.057	15.9
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	1.1E+05	2.2E+06	300	0.057	6425.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	1.1E+05	1.7E+06	300	0.057	6425.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	2.1E+04	8.5E+05	300	0.057	1183.7
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	2.1E+04	3.5E+05	300	0.057	1183.7
Total					3.1E+05	6.3E+06			1.8E+04

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

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

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	0.00036	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$	
where p =	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, E_f =	0.66	0.13	0.02	lb/mile
Mitigated Emission Factor, E_{ext} =	0.60	0.12	0.02	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.40	0.08	0.01	0.36	0.07	0.01	0.18	0.04	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.40	0.08	0.01	0.36	0.07	0.01	0.18	0.04	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.013	0.003	3.7E-04	0.012	0.002	3.4E-04	0.006	1.2E-03	1.7E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.013	0.003	3.7E-04	0.012	0.002	3.4E-04	0.006	1.2E-03	1.7E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	5.2E-03	1.0E-03	1.5E-04	4.8E-03	9.3E-04	1.4E-04	2.4E-03	4.7E-04	6.9E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	5.2E-03	1.0E-03	1.5E-04	4.8E-03	9.3E-04	1.4E-04	2.4E-03	4.7E-04	6.9E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	2.11	0.41	0.06	1.93	0.38	0.06	0.97	0.19	0.03
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	2.11	0.41	0.06	1.93	0.38	0.06	0.97	0.19	0.03
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.39	0.08	0.01	0.36	0.07	0.01	0.18	0.03	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.39	0.08	0.01	0.36	0.07	0.01	0.18	0.03	0.01
Totals		5.84	1.14	0.17	5.34	1.04	0.15	2.67	0.52	0.08

Methodology

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

Abbreviations

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

**Appendix A.2: Limited Emissions Summary
Cold Mix Asphalt Production and Stockpiles**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Cold Mix Asphalt VOC Usage Limitation = 67.60 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%	71.16	67.60	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	96.58	67.60	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	270.41	67.60	4.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	145.70	67.60	2.155
Other asphalt with solvent binder	25.9%	2.5%	2704.14	67.60	40.0
Worst Case Limited PTE of VOC =				67.60	

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) =	17.63
Limited PTE of Single HAP (tons/yr) =	6.08 Xylenes

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

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

Methodology

Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [VOC Solvent Usage Limitation (tons/yr)]

Limited PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

Limited PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Gasoline Fuel Transfer and Dispensing Operation**

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Renewal No.: F123-28142-00025
Reviewer: Hannah L. Desrosiers
Date Submitted: 06/24/09

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.
 To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used.
 The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= 40.0 \text{ gallons/day} \\ &= 14.6 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.002
Tank breathing and emptying	1.0	0.01
Vehicle refueling (displaced losses - controlled)	1.1	0.01
Spillage	0.7	0.01
Total		0.02

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) =	0.01	
Limited PTE of Single HAP (tons/yr) =	0.002	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)]

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tph.htm>



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Brian Peters
J.H. Rudolph & Company, Inc - St. Croix Plant
534 Mozart St
Tell City, IN 47586

DATE: February 11, 2010

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

SUBJECT: Final Decision
FESOP - Renewal
123-28142-00025

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Alvin Evans (COO)
Christopher Zirkelbach (Environmental & Safety Solutions)
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

February 11, 2010

TO: Tell City Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: J.H. Rudolph & Company
Permit Number: 123-28142-00025

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	MIDENNEY 2/11/2010 J. H. Rudolph & Company, Inc. - St. Croix Plant 123-28142-00025 (final)		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		Brian Peters J. H. Rudolph & Company, Inc. - St. Croix Plant 534 Mozart St Tell City IN 47586 (Source CAATS) via confirmed delivery										
2		Alvin C Evans COO J. H. Rudolph & Company, Inc. - St. Croix Plant PO Box 5226 Evansville IN 47716-5226 (RO CAATS)										
3		Perry County Health Department Courthouse Annex Cannelton IN 47520-1251 (Health Department)										
4		English Town Council and Town Manager PO Box 258 English IN 47118 (Local Official)										
5		Mr. Randy Brown Plumbers & Steam Fitters Union, Local 136 2300 St. Joe Industrial Park Dr Evansville IN 47720 (Affected Party)										
6		Mr. Ron Hendrich Schwab Corporation 4630 E St Rd 66 Cannelton IN 47520 (Affected Party)										
7		Perry County Commissioners Court House, 2219 Payne Street Tell City IN 47586 (Local Official)										
8		Tell City Perry County Public Library 2328 Tell Street Tell City IN 47586-1717 (Library)										
9		Jeff Mulzer J. H. Rudolph & Company, Inc. P.O. Box 5226 Evansville IN 47716-5226 (Consultant)										
10		Mr. John Blair 800 Adams Ave Evansville IN 47713 (Affected Party)										
11		Christopher Zirkelbach Environmental & Safety Solutions 100 NW Second Street, Suite 40 Evansville IN 47708 (Consultant)										
12												
13												
14												
15												

Total number of pieces Listed by Sender 10	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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