



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding the Renewal of a
Federally Enforceable State Operating Permit (FESOP)
for Rieth-Riley Construction Co., Inc. in St. Joseph County

FESOP Renewal No.: F141-36333-00027

The Indiana Department of Environmental Management (IDEM) has received an application from Rieth-Riley Construction Co., Inc. located at 25200 SR 23, South Bend, Indiana 46614 for a renewal of its FESOP issued on June 30, 2006. If approved by IDEM's Office of Air Quality (OAQ), this proposed renewal would allow Rieth-Riley Construction Co., Inc. to continue to operate its existing source.

This draft FESOP renewal does not contain any new equipment that would emit air pollutants; however, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g., changes that add or modify synthetic minor emission limits). This notice fulfills the public notice procedures to which those conditions are subject. IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow for these changes.

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

St. Joseph Co. Public Library - Lasalle Branch
3232 W Ardmore Trail
South Bend, IN 46628

and

IDEM Northern Regional Office
300 N. Michigan Street, Suite 450
South Bend, IN 46601-1295

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

How can you participate in this process?

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

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

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number F141-36333-00027 in all correspondence.

Comments should be sent to:

Tamera Wessel
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 4-8530
Or dial directly: (317) 234-8530
Fax: (317) 232-6749 attn: Tamera Wessel
E-mail: twessel@idem.IN.gov

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

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

What will happen after IDEM makes a decision?

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

If you have any questions, please contact Tamera Wessel of my staff at the above address.



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



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

DRAFT

Carol S. Comer
Commissioner

Federally Enforceable State Operating Permit
Renewal
OFFICE OF AIR QUALITY

Rieth-Riley Construction Co., Inc.
25200 State Road 23
South Bend, Indiana 46614

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-2 and 326 IAC 2-8-11.1, applicable to those conditions

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Table with 2 columns: Issued by (Jason R. Krawczyk, Section Chief, Permits Branch, Office of Air Quality) and Issuance/Expiration Date.



TABLE OF CONTENTS

SECTION A	SOURCE SUMMARY	5
A.1	General Information [326 IAC 2-8-3(b)]	
A.2	Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]	
A.3	Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(l)]	
A.4	FESOP Applicability [326 IAC 2-8-2]	
SECTION B	GENERAL CONDITIONS	7
B.1	Definitions [326 IAC 2-8-1]	
B.2	Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]	
B.3	Term of Conditions [326 IAC 2-1.1-9.5]	
B.4	Enforceability [326 IAC 2-8-6][IC 13-17-12]	
B.5	Severability [326 IAC 2-8-4(4)]	
B.6	Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]	
B.7	Duty to Provide Information [326 IAC 2-8-4(5)(E)]	
B.8	Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]	
B.9	Annual Compliance Certification [326 IAC 2-8-5(a)(1)]	
B.10	Compliance Order Issuance [326 IAC 2-8-5(b)]	
B.11	Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]	
B.12	Emergency Provisions [326 IAC 2-8-12]	
B.13	Prior Permits Superseded [326 IAC 2-1.1-9.5]	
B.14	Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]	
B.15	Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]	
B.16	Permit Renewal [326 IAC 2-8-3(h)]	
B.17	Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]	
B.18	Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]	
B.19	Source Modification Requirement [326 IAC 2-8-11.1]	
B.20	Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]	
B.21	Transfer of Ownership or Operational Control [326 IAC 2-8-10]	
B.22	Annual Fee Payment [326 IAC 2-7-19][326 IAC 2-8-4(6)][326 IAC 2-8-16][326 IAC 2-1.1-7]	
B.23	Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314][326 IAC 1-1-6]	
SECTION C	SOURCE OPERATION CONDITIONS.....	17
	Emission Limitations and Standards [326 IAC 2-8-4(1)]	17
C.1	Overall Source Limit [326 IAC 2-8]	
C.2	Opacity [326 IAC 5-1]	
C.3	Open Burning [326 IAC 4-1][IC 13-17-9]	
C.4	Incineration [326 IAC 4-2][326 IAC 9-1-2]	
C.5	Fugitive Dust Emissions [326 IAC 6-4]	
C.6	Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]	
C.7	Stack Height [326 IAC 1-7]	
C.8	Asbestos Abatement Projects [326 IAC 14-10][326 IAC 18][40 CFR 61, Subpart M]	
	Testing Requirements [326 IAC 2-8-4(3)].....	19
C.9	Performance Testing [326 IAC 3-6]	
	Compliance Requirements [326 IAC 2-1.1-11]	19
C.10	Compliance Requirements [326 IAC 2-1.1-11]	
	Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]	20
C.11	Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]	
C.12	Instrument Specifications [326 IAC 2-1.1-11][326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]	

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]	20
C.13 Emergency Reduction Plans [326 IAC 1-5-2][326 IAC 1-5-3]	
C.14 Risk Management Plan [326 IAC 2-8-4][40 CFR 68]	
C.15 Response to Excursions or Exceedances [326 IAC 2-8-4][326 IAC 2-8-5]	
C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]	
Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]	22
C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)][326 IAC 2-8-5]	
C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)][326 IAC 2-1.1-11]	
Stratospheric Ozone Protection	23
C.19 Compliance with 40 CFR 82 and 326 IAC 22-1	
SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS	24
Emission Limitations and Standards [326 IAC 2-8-4(1)]	24
D.1.1 Particulate Matter (PM) PSD Minor Limitations [326 IAC 2-2]	
D.1.2 FESOP Limitations [326 IAC 2-8-4][326 IAC 2-2][326 IAC 8-1-6]	
D.1.3 Particulate Matter (PM) [326 IAC 6.5-1-2]	
D.1.4 FESOP Limits: SO ₂ , NO _x , and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]	
D.1.5 Sulfur Dioxide (SO ₂) [326 IAC 7-1.1-2][326 IAC 7-2-1]	
D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]	
Compliance Determination Requirements [326 IAC 2-8-4(1)]	27
D.1.7 Particulate Control	
D.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]	
D.1.9 Sulfur Dioxide (SO ₂) Emissions and Sulfur Content	
D.1.10 Multiple Fuel and Slag Usage Limitations	
D.1.11 Waste Oil Usage / HAP (HCl) Emissions [326 IAC 2--8-4]	
D.1.12 Shingle Asbestos Content	
D.1.13 Chlorine Content	
Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]	31
D.1.14 Visible Emissions Notations	
D.1.15 Broken or Failed Bag Detection	
Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]	32
D.1.16 Record Keeping Requirement	
D.1.17 Reporting Requirements	
SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS	34
Emission Limitations and Standards [326 IAC 2-8-4(1)]	34
D.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-5-2]	
D.2.2 Volatile Organic Compounds (VOC) [326 IAC 2-8-4][326 IAC 2-2]	
Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]	35
D.2.3 Record Keeping Requirements	
D.2.4 Reporting Requirements	
SECTION E.1 NSPS	37
New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]	37
E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1][40 CFR Part 60, Subpart A]	
E.1.2 New Source Performance Standards (NSPS) for Hot-mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12]	
E.1.3 Testing Requirements [326 IAC 2-8-5(a)(1),(4)] [326 IAC 2-1.1-11]	
CERTIFICATION	38

EMERGENCY OCCURRENCE REPORT 39

FESOP Quarterly Report 41

FESOP Quarterly Report 42

FESOP Quarterly Report 45

QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT 46

Attachment A - Fugitive Dust Control Plan

**Attachment B - NSPS Subpart I - Standards of Performance for Hot-mix Asphalt Facilities
[40 CFR Part 60, Subpart I][326 IAC 12-1]**

SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary hot mix asphalt production plant.

Source Address:	25200 State Road 23, South Bend, Indiana 46614
General Source Phone Number:	574-875-5183
SIC Code:	2951
County Location:	St Joseph
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

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

- (a) One (1) aggregate rotary dryer and drum hot-mix unit (dryer/mixer), identified as DRUM, approved for construction in 2009, with a maximum capacity of four hundred fifty (450) tons of asphalt per hour, processing blast furnace slag, electric arc furnace steel mill slag, and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix, equipped with one (1) dryer/mixer burner, having a maximum heat input capacity of one hundred fifty (150) MMBtu per hour, firing waste oil as primary fuel, using No. 2 fuel oil, No. 4 fuel oil, natural gas, propane gas, and butane gas as backup fuels, equipped with a ninety thousand (90,000) actual cubic feet per minute (acfm) baghouse for particulate control and exhausting through Stack SV1. No shingles are ground at this source.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum hot-mix asphalt operation is considered an affected facility.
- (b) One (1) hot oil heater, identified as 14A, constructed in 1988, with a maximum heat input capacity of 2.0 MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV2.
- (c) One (1) hot oil heater, identified as 14B, approved for construction in 2009, with a maximum heat input capacity of two (2.0) MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV10.
- (d) Two (2) tanks, identified as 13A and 13B, storing liquid asphalt, constructed in 1987, with a maximum capacity of 20,000 gallons each, and exhausting through Stacks SV5 and SV7.
- (e) One (1) tank, identified as 13C, storing liquid asphalt, constructed in 1965, with a maximum capacity 25,000 gallons, and exhausting through stack SV6.

- (f) One (1) tank for storing liquid asphalt, identified as 13D, approved for construction in 2008, with a maximum capacity of thirty thousand (30,000) gallons, and exhausting through Stack SV11.
- (g) One (1) tank, identified as 11, storing waste oil or No. 4 distillate oil, constructed in 1987, with a maximum capacity of 17,000 gallons, and exhausting through Stack SV8.
- (h) One (1) tank, identified as 12, storing No. 2 distillate oil, constructed in 1987, with a maximum capacity 25,000 gallons, and exhausting through stack SV9.
- (i) Cold-mix cutback asphalt production, constructed in 1988, with a maximum capacity of 372 tons of aggregate per hour.

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) Two (2) A.C. tank heaters, firing No. 2 fuel oil as primary fuel, firing natural gas, propane gas and butane gas as backup fuels, with a maximum heat input capacity of 0.48 million British thermal units per hour, each.
- (b) The following VOC and HAP storage containers: vessels storing lubricating oil, hydraulic oils, machining oils, and machining fluids.

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, F141-36333-00027, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

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

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

B.5 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

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

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

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

- (a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

- (1) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and
 - (2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
 - (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

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

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
 - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

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

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

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

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

- (a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

- (b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

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

The Permittee shall implement the PMPs.

- (c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.12 Emergency Provisions [326 IAC 2-8-12]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ or Northern 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 Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

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

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

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

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

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

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

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

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

- (a) All terms and conditions of permits established prior to F141-36333-00027 and issued pursuant to permitting programs approved into the state implementation plan have been either:
- (1) incorporated as originally stated,
- (2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

**B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]**

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.16 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue

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

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

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

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

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

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:
- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
 - (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
 - (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
 - (4) The Permittee notifies the:

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

and

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

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

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

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

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

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

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

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

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

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

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

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

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

B.22 Annual Fee Payment [326 IAC 2-7-19][326 IAC 2-8-4(6)][326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314][326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to

whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

C.1 Overall Source Limit [326 IAC 2-8]

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

- (a) Pursuant to 326 IAC 2-8:
 - (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
 - (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
 - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.
- (c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.
- (d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.2 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of thirty percent (30%) 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.3 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.4 Incineration [326 IAC 4-2][326 IAC 9-1-2]

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

C.5 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.6 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.7 Stack Height [326 IAC 1-7]

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

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

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

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

- (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
- (2) If there is a change in the following:
 - (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Licensed Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

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

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

- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.10 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any

monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

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

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

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

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

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

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

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

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

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

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

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

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

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

- (a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

- (b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

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

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

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

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

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

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

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.
- (b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

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

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

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

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

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

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

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

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

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

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

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

- (b) The address for report submittal is:

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

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

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

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) aggregate rotary dryer and drum hot-mix unit (dryer/mixer), identified as DRUM, approved for construction in 2009, with a maximum capacity of four hundred fifty (450) tons of asphalt per hour, processing blast furnace slag, electric arc furnace steel mill slag, and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix, equipped with one (1) dryer/mixer burner, having a maximum heat input capacity of one hundred fifty (150) MMBtu per hour, firing waste oil as primary fuel, using No. 2 fuel oil, No. 4 fuel oil, natural gas, propane gas, and butane gas as backup fuels, equipped with a ninety thousand (90,000) actual cubic feet per minute (acfm) baghouse for particulate control and exhausting through Stack SV1. No shingles are ground at this source.

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

- (b) One (1) hot oil heater, identified as 14A, constructed in 1988, with a maximum heat input capacity of 2.0 MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV2.
- (c) One (1) hot oil heater, identified as 14B, approved for construction in 2009, with a maximum heat input capacity of two (2.0) MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV10.

Insignificant Activities:

- (a) Two (2) A.C. tank heaters, firing No. 2 fuel oil as primary fuel, firing natural gas, propane gas and butane gas as backup fuels, with a maximum heat input capacity of 0.48 million British thermal units per hour, each.

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

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

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

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

- (a) The asphalt production rate shall be limited to less than 1,000,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) PM emissions from the dryer/mixer shall be limited to less than 0.382 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, will limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

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

Pursuant to 326 IAC 2-8-4, the emissions of PM₁₀, PM_{2.5}, VOC, and CO from the dryer/mixer shall be limited as follows:

- (a) The asphalt production rate shall be limited to less than 1,000,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) PM₁₀ emissions from the dryer/mixer shall be limited to less than 0.161 pounds of PM₁₀ per ton of asphalt produced.
- (c) PM_{2.5} emissions from the dryer/mixer shall be limited to less than 0.180 pounds of PM_{2.5} per ton of asphalt produced.
- (d) VOC emissions from the dryer/mixer shall be limited to less than 0.032 pounds of VOC per ton of asphalt produced.
- (e) CO emissions from the dryer/mixer shall be limited to less than 0.130 pounds of CO per ton of asphalt produced.

Compliance with these limits, combined with the potential to emit PM₁₀, PM_{2.5}, CO, and VOC from all other emission units at this source, will render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Compliance with the throughput limit and lb/ton VOC emission limit shall limit the VOC emissions from the dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable.

D.1.3 Particulate Matter (PM) [326 IAC 6.5-1-2]

Pursuant to 326 IAC 6.5-1-2 (Particulate Matter Limitations Except Lake County), particulate matter (PM) emissions from the dryer/mixer, hot oil heaters, and A. C. tank heaters shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf).

D.1.4 FESOP Limits: SO₂, NO_x, and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

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

- (a) Fuel and Slag Specifications
 - (1) The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight.
 - (2) The sulfur content of the No. 4 fuel oil shall not exceed 0.5% by weight.
 - (3) The sulfur content of the waste oil shall not exceed 1.00% by weight
 - (4) The waste oil combusted shall not contain more than 0.50% ash, 0.40% chlorine, and 0.01% lead.
 - (5) The HCl emissions shall not exceed 26.4 pounds of HCl per 1,000 gallons of waste oil burned.
 - (6) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.
 - (7) The SO₂ emissions from the dryer/mixer shall not exceed 0.740 pounds per ton

of blast furnace slag processed in the aggregate mix.

- (8) The sulfur content of the steel slag shall not exceed 0.66% by weight.
- (9) The SO₂ emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag processed in the aggregate mix.

(b) Single Fuel and Slag Usage Limitations:

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

- (1) Natural gas usage shall not exceed 1,007 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) No. 2 fuel oil usage shall not exceed 1,436,125 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (3) No. 4 fuel oil usage shall not exceed 1,359,531 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (4) Propane usage shall not exceed 14,519,337 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (5) Butane usage shall not exceed 12,753,906 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (6) Waste oil usage shall not exceed 693,638 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (7) The Blast Furnace slag usage shall not exceed 1,655,640 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) Multiple Fuel and Slag Usage Limitation:

When combusting any single fuel or more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, hot oil heaters, and A.C. tank heaters, in conjunction with the use of slag in the aggregate mix, emissions shall be limited as follows:

- (1) SO₂ emissions shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) NO_x emissions shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) HCl Limitation:

HCl emissions from the dryer/mixer burner shall not exceed 9.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(e) Asphalt Shingle Usage Limitation

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use the following as an additive in its aggregate mix:

- (1) Certified asbestos-free factory second asphalt shingles;

- (2) Post consumer waste shingles generated at single family homes and/or residential buildings containing four or fewer dwelling units; and/or
- (3) Factory second shingles and/or post consumer waste shingles that have sampled negative for asbestos.

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

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

- (a) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations), the SO₂ emissions from the dryer/mixer burner at the asphalt plant shall not exceed five-tenths (0.5) pound per million Btu heat input while combusting distillate oil (including No. 2 fuel oil).
- (b) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the dryer/mixer burner shall be limited to 1.6 pounds per million Btu heat input when using residual oil (including waste oil).
- (c) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.1.7 Particulate Control

- (a) In order to comply with Conditions D.1.1(b), D.1.2(b), D.1.2(c), and D.1.3, the baghouse controlling emissions from the dryer/mixer shall be in operation at all times that the dryer/mixer at this asphalt plant 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.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

- (a) In order to demonstrate compliance with Conditions D.1.1(b), D.1.2(b), D.1.2(c), and D.1.3, the Permittee shall perform PM, PM₁₀, and PM_{2.5} testing of the dryer/mixer not later than five (5) years from the date of the most recent valid compliance demonstration. This testing shall be conducted utilizing methods approved by the Commissioner and shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

- (b) In order to demonstrate compliance with Condition D.1.4(a)(7), when using blast furnace slag, the Permittee shall perform SO₂ testing for one (1) aggregate dryer not later than one hundred eighty (180) days of initial use of blast furnace slag in the aggregate mix with the drum mixers, utilizing methods as approved by the Commissioner. Testing shall only be performed if the company has not previously performed SO₂ testing while using blast furnace slag in the aggregate mix at one of their other Indiana facilities.

D.1.9 Sulfur Dioxide (SO₂) Emissions and Sulfur Content

Fuel Oil

Compliance with Conditions D.1.4(a)(1 through 2), shall be determined utilizing one of the following options.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions and sulfur content do not exceed the limitations contained in Conditions D.1.4(a)(1 and 2) and D.1.5 by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 150 MMBtu per hour burner for the dryer/mixer, 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.

Blast Furnace Slag

- (b) Pursuant to 326 IAC 2-8-4 (FESOP), compliance with the blast furnace slag limitations established in Condition D.1.4(a)(6) shall be determined utilizing one of the following options. Compliance shall be demonstrated on a thirty (30) day calendar-month average.
 - (1) Maintaining all records of vendor analyses or certifications of Blast Furnace slag delivered; or
 - (2) Analyzing a sample of each blast furnace slag delivery, if no vendor analyses or certifications are available, to determine the sulfur content of the Blast Furnace slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.
 - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

Steel Slag

- (c) Pursuant to 326 IAC 2-8-4 (FESOP), compliance with the steel slag limitations established in Condition D.1.4(a)(8) shall be determined utilizing one of the following options. Compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of steel slag delivered; or
 - (2) Analyzing a sample of each steel slag delivery, if no vendor analyses or certifications are available, at least once per quarter, to determine the sulfur content of the steel slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.
 - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

D.1.10 Multiple Fuel and Slag Usage Limitations

- (a) In order to comply with the Condition D.1.4(c)(1) when combusting any single fuel or more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, hot oil heaters, and/or A.C. tank heaters, in conjunction with the use of slag in the aggregate mix, the Permittee shall limit fuel usage according to the following formulas:

Sulfur Dioxide Emission Calculation

$$SO_2 = \frac{G(E_G) + O(E_O) + F(E_F) + P(E_P) + B(E_B) + W(E_W) + BL(E_{BL}) + SL(E_{SL})}{2,000 \text{ lbs/ton}}$$

where:

- SO₂ = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in last 12 months
- F = gallons of No. 4 fuel oil used in last 12 months
- P = gallons of Propane used in last 12 months
- B = gallons of Butane used in last 12 months
- W = gallons of Waste oil used for last 12 months
- BL = tons of blast furnace slag used in the dryer/mixer in the last 12 months
- SL = tons of steel slag used in the dryer/mixer in the last 12 months
- E_G = 0.60 lb/million cubic feet of natural gas
- E_O = 71.00 pounds/1000 gallons of No. 2 fuel oil
- E_F = 75.00 pounds/1000 gallons of No. 4 fuel oil
- E_P = 0.02 pounds/1000 gallons of Propane
- E_B = 0.02 pounds/1000 gallons of Butane
- E_W = 147.0 pounds/1000 gallons of waste oil
- E_{BL} = 0.74 lb/ton of blast furnace slag used
- E_{SL} = 0.0014 lb/ton of steel slag used

- (b) In order to comply with Condition D.1.4(c)(2) when combusting any single fuel or more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, hot oil heaters, and/or A.C. tank heaters, in conjunction with the use of slag in the aggregate mix, the Permittee shall determine NOx emissions from the dryer/mixer burner according to the following formula:

Nitrogen Oxides (NOx) Emission Calculation

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

where:

- NOx = tons of NOx emissions for a 12-month consecutive period
G = million cubic feet of natural gas used in the last 12 months
O = gallons of No. 2 fuel oil used in last 12 months
F = gallons of No. 4 fuel oil used in last 12 months
P = gallons of Propane used in last 12 months
B = gallons of Butane used in last 12 months
W = gallons of Waste oil used for last 12 months
E_G = 190 lb/million cubic feet of natural gas
E_O = 24.00 pounds/1000 gallons of No. 2 fuel oil
E_F = 47.00 pounds/1000 gallons of No. 4 fuel oil
E_P = 13.00 pounds/1000 gallons of Propane
E_B = 15.00 pounds/1000 gallons of Butane
E_W = 19.0 pounds/1000 gallons of waste oil

D.1.11 Waste Oil Usage / HAP (HCl) Emissions [326 IAC 2--8-4]

In order to determine compliance with Condition D.1.4(d), when using waste oil, HCl emissions shall be determined in accordance with the following:

- (a) Waste oil usage with respect to the actual chlorine content shall be determined using the following equation:

$$U = \sum_{k=1}^n (W_A * Cl_A)$$

Where:

- U = equivalent waste oil usage (gallons) in previous 12 consecutive months;
n = total number of waste oil deliveries;
k = each specific waste oil delivery;
W_A = actual gallons of waste oil used from each specific waste oil delivery; and
Cl_A = actual percent by weight chlorine content of waste oil for each specific waste oil delivery.

- (b) Hydrogen chloride (HCl) emissions shall be determined using the following equation:

$$\text{HCl} = \frac{U}{1000} (66.0) \\ 2000$$

Where:

- HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period;
and
U = equivalent waste oil usage (gallons) as determined by the equation in D.1.11(a).
66.0 = Numeric multiplier from AP-42, Chapter 1.11, Table 1.11-3, for determining HCl

emissions.

D.1.12 Shingle Asbestos Content

Compliance with Condition D.1.4(d) shall be determined utilizing one of the following options:

- (a) Providing a shingle supplier certification that the factory second shingles do not contain asbestos;
- (b) Obtaining from the post consumer waste shingle supplier a signed certification that the post consumer waste shingles were generated at single family homes and/or residential buildings containing four or fewer dwelling units; and/or
- (c) Analyzing a sample of the factory second shingles and/or post consumer waste shingles delivery to determine the asbestos content of the shingles, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

D.1.13 Chlorine Content

The Permittee shall demonstrate compliance with the waste oil chlorine content limit established in Condition D.1.4(a)(4), by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

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

D.1.14 Visible Emissions Notations

- (a) Visible emission notations of the dryer/mixer stack (SV1) exhaust shall be performed at least once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Section C- Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.1.15 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 emission unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

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

D.1.16 Record Keeping Requirement

- (a) To document the compliance status with Conditions D.1.1(a), and D.1.2(a), the Permittee shall keep monthly records of the amount of asphalt processed through the dryer/mixer.
- (b) To document the compliance status with Conditions D.1.4, D.1.5, D.1.9, D.1.10, D.1.12, and D.1.13 the Permittee shall maintain records in accordance with (1) through (11) below. Records maintained for (1) through (10) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.4, D.1.5, D.1.9, D.1.10, D.1.12, and D.1.13.
- (1) Calendar dates covered in the compliance determination period;
 - (2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide and nitrogen oxide emission rates for each fuel used at the source since the last compliance determination period;
 - (3) Actual waste oil usage, ash, chlorine, and lead content, and equivalent hydrogen chloride emission rate for waste oil used at the source since the last compliance determination period;
 - (4) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
 - (5) If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
 - (i) Fuel supplier certifications;
 - (ii) The name of the fuel supplier; and
 - (iii) A statement from the fuel supplier that certifies the sulfur content of the No. 2, No. 4, and waste oil, and the chlorine content of waste oil.
 - (6) Actual blast furnace and steel slag usage, sulfur content and equivalent sulfur dioxide emission rates for all blast furnace and steel slag used at the source since the last compliance determination period;
 - (7) A certification, signed by the owner or operator, that the records of the blast furnace and steel slag supplier certifications represent all of the blast furnace and steel slag used during the period; and
 - (8) If the slag supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:

- (i) Blast furnace and steel slag supplier certifications;
 - (ii) The name of the blast furnace and steel slag supplier; and
 - (iii) A statement from the blast furnace and steel slag supplier that certifies the sulfur content of the blast furnace and steel slag.
- (9) If the factory second shingle supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
- (A) Factory second shingle supplier certifications;
 - (B) The name of the factory second shingle supplier(s); and
 - (C) A statement from the factory second shingle supplier(s) that certifies the shingles from their company do not contain asbestos.
- (10) If the post consumer waste shingle supplier certification is used to demonstrate compliance, the following as a minimum, shall be maintained:
- (A) Post consumer waste shingle supplier certifications;
 - (B) The name of the post consumer waste shingle supplier(s); and
 - (C) A statement from the post consumer shingle supplier(s) that certifies the shingles were generated at single family homes and/or residential buildings containing four or fewer dwelling units.
- (11) If the factory second shingles and/or post consumer waste shingles are analyzed to determine the asbestos content, the following, as a minimum, shall be maintained:
- (A) The name of the shingle supplier(s);
 - (B) The name of the certified lab or certified personnel that performed the shingle asbestos content analysis; and
 - (C) The shingle asbestos content analysis results.
- (c) To document the compliance status with Condition D.1.14, the Permittee shall maintain records of visible emission notations of the dryer/mixer stack (SV1) exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).
- (d) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.1.17 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.1.1(a), D.1.2(a), D.1.4(b) and D.1.4(c) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (i) Cold-mix cutback asphalt production, constructed in 1988, with a maximum capacity of 372 tons of aggregate per hour.

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

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

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

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

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

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

- (a) Pursuant to 326 IAC 2-8-4, the VOC emissions from the sum of the binders shall not exceed 54.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) The VOC emissions from any liquid binder used in asphalt production shall not exceed 54.62 tons per year. The liquid binder used in asphalt production shall be limited as follows:
 - (1) Cutback asphalt rapid cure liquid binder usage shall not exceed 57.49 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 95% volatilization)
 - (2) Cutback asphalt medium cure liquid binder usage shall not exceed 78.03 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 70% volatilization)
 - (3) Cutback asphalt slow cure liquid binder usage shall not exceed 218.48 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 25% volatilization)
 - (4) Emulsified asphalt with solvent liquid binder usage shall not exceed 117.72 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 46.4% volatilization)
 - (5) Emulsified asphalt with fuel oil liquid binder usage shall not exceed 2,184.80 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. The fuel oil diluent shall be limited to 25.9% of the total weight of the emulsified asphalt mix. (Based on 2.5% volatilization)

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

- (1) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) month consecutive period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder (or for a type of binder not listed above), the Permittee shall use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment ratio listed in the table that follows. [The adjustment ratio is equal to 1/(percent of initial VOC in solvent that volatilizes or is emitted from the final product)]

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

Type of binder	Adjustment ratio
Cutback Asphalt Rapid Cure (95% volatilization)	1.053
Cutback Asphalt Medium Cure (70% volatilization)	1.429
Cutback Asphalt Slow Cure (25% volatilization)	4.000
Emulsified Asphalt (46.4% volatilization)	2.155
Emulsified Asphalt (2.5% volatilization)	40.00

The equivalent total tons of VOC emitted from the combined liquid binders shall be less than 54.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit VOCs and HAPs from all other emission units at this source, will limit source-wide VOC emissions to less than 100 tons per twelve (12) consecutive month period, any single HAP 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 the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants) not applicable.

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

D.2.3 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.2(b)(1) through (5), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.2(b)(1) through (5).

- (1) Calendar dates covered in the compliance determination period;
- (2) Cutback asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;
- (3) VOC solvent content by weight of the cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and

- (4) Amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.

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

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

D.2.4 Reporting Requirements

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

SECTION E.1

NSPS

Emissions Unit Description:

- (a) One (1) aggregate rotary dryer and drum hot-mix unit (dryer/mixer), identified as DRUM, approved for construction in 2009, with a maximum capacity of four hundred fifty (450) tons of asphalt per hour, processing blast furnace slag, electric arc furnace steel mill slag, and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix, equipped with one (1) dryer/mixer burner, having a maximum heat input capacity of one hundred fifty (150) MMBtu per hour, firing waste oil as primary fuel, using No. 2 fuel oil, No. 4 fuel oil, natural gas, propane gas, and butane gas as backup fuels, equipped with a ninety thousand (90,000) actual cubic feet per minute (acfm) baghouse for particulate control and exhausting through Stack SV1. No shingles are ground at this source.

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

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

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

E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1][40 CFR Part 60, Subpart A]

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart I.
- (b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

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

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

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

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

The Permittee shall perform the stack testing required under NSPS 40 CFR 60, Subpart I, utilizing methods as approved by the Commissioner to document compliance with Condition E.1.2. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

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

Source Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F141-36333-00027

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: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F141-36333-00027

This form consists of 2 pages

Page 1 of 2

- | |
|---|
| <input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <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 2-8-12 |
|---|

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

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

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

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO ₂ , VOC, NO _x , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

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

FESOP Quarterly Report

Source Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F141-36333-00027
Facility: Dryer/Mixer DRUM
Parameter: **Hot-mix Asphalt Production**
Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER : _____ YEAR: _____

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

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

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

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

FESOP Quarterly Report

Page 1 of 3

Source Name: Rieth-Riley Construction Co., Inc.
 Source Address: 25200 State Road 23, South Bend, Indiana 46614
 FESOP Permit No.: F141-36333-00027
 Facility: Dryer/Mixer

Parameter: **Fuel & Slag Usage / SO₂ emissions / NO_x emissions**

Emission Limits: Sulfur dioxide (SO₂) emissions shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.10(a).

Nitrogen Oxides (NO_x) emissions shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.10(b).

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

Fuel Type (Units)	Fuel Usage Limit (per 12 consecutive month period)
Dryer/Mixer Burner	
Natural Gas (million cubic feet)	1,007
No. 2 Distillate Fuel Oil (gallons)	1,436,125
No. 4 Fuel Oil (gallons)	1,359,531
Propane (gallons)	14,519,337
Butane (gallons)	12,753,906
Waste Oil (gallons)	693,638
Blast Furnace Slag (tons)	1,655,640

Facility: Cold-mix Asphalt Production

Parameter: **Binder Usage / VOC Emissions**

Emission Limits: VOC emissions from the sum of the binders shall not exceed 54.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Type of Binder	Binder Usage Limit (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	57.49
Cutback Asphalt Medium Cure	78.03
Cutback Asphalt Slow Cure	218.48
Emulsified Asphalt	117.72
Other Asphalt	2,184.80

FESOP Quarterly Report - Fuel & Slag Usage / SO2 emissions / NOx emissions Page 2 of 3

QUARTER: _____ YEAR: _____

Month	Fuel / Slag Usage (units)	Column 1	Column 2	Column 1 +Column 2	SO2 Emissions (tons per 12 months)	NOx Emissions (tons per 12 months)
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total		
	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste Fuel Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag (tons)					
	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste Fuel Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag (tons)					
	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste Fuel Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag (tons)					

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

FESOP Quarterly Report - Binder Usage / VOC Emissions

QUARTER: _____ YEAR: _____

Month	Solvent Usage this Month (Tons)	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)
	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				

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

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

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

Type of Binder	Adjustment Factor
Cutback Asphalt Rapid Cure	1.053
Cutback Asphalt Medium Cure	1.429
Cutback Asphalt Slow Cure	4.000
Emulsified Asphalt	2.155
Other Asphalt	40.000

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

FESOP Quarterly Report

Source Name: Rieth-Riley Construction Co., Inc.
 Source Address: 25200 State Road 23, South Bend, Indiana 46614
 FESOP Permit No.: F141-36333-00027
 Facility: Dryer/Mixer DRUM
 Parameter: **HCl emissions**
 Limit: HCl emissions from the dryer/burner shall not exceed 9.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Hydrogen Chloride (HCl) emissions shall be determined using the following equation:

$$HCl = \frac{U}{1000} \frac{(66.0)}{2000}$$

<p><u>Where:</u> HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and U = equivalent waste oil usage (gallons) as determined by the equation in D.1.11(a)</p>	<p><u>Emission Factor:</u> 66.0 = Numeric multiplier from AP-42, Chapter 1.11, Table 1.11-3, for determining HCl emissions.</p>
--	--

QUARTER : _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	HCl Emissions this Month (tons)	HCl Emissions Previous 11 Months (tons)	HCl Emissions 12 Month Total (tons)

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

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

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

Source Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F141-36333-00027

Months: _____ to _____ Year: _____

Page 1 of 2

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

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

Attachment A

Federally Enforceable State Operating Permit (FESOP) Renewal No. F141-36333-00027

HOT MIX ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN

**Rieth-Riley Construction Company, Inc.
25200 State Road 23
South Bend, Indiana**

1. Fugitive particular matter (dust) emissions from paved roads, unpaved roads, and parking lots shall be controlled on an as-needed basis by one or more of the following measures:
 - A. Paved roads and parking lots:
 - i. Cleaning by vacuum sweeping.
 - ii. Power brooming while wet either from rain or application of water.
 - iii. Wetting surface by use of sprinklers or water truck.
 - B. Unpaved roads and parking lots:
 - i. Paving with asphalt.
 - ii. Treating with emulsified asphalt on an as-needed basis.
 - iii. Treating with water on an as-needed basis.
 - iv. Double chip and seal the road surface and maintained on an as-needed basis.
2. Fugitive particulate matter (dust) emissions from aggregate stockpiles shall be controlled by one or more of the following measures.
 - A. Maintain minimum size and number of stockpiles of aggregate.
 - B. Treating around the stockpile area with emulsified asphalt on an as-needed basis.
 - C. Treating around the stockpile area with water on an as-needed basis.
 - D. Treating the stockpiles with water on an as-needed basis.
3. Fugitive particulate matter (dust) emission from outdoor conveying of aggregates shall be controlled by the following measure:
 - A. Apply water at the feed and the intermediate points on an as-needed basis.
4. Fugitive particulate matter (dust) emissions resulting from the transferring of aggregates shall be controlled by one or more of the following measures:
 - A. Minimize the vehicular distance between the transfer points.
 - B. Enclose the transfer points.
 - C. Apply water on transfer points on an as-needed basis.

5. Fugitive particulate matter (dust) emissions from the transportation of aggregate by truck, front end loader, etc., shall be controlled by one or more of the following measures:
 - A. Tarping the aggregate hauling vehicles.
 - B. Maintain vehicle bodies in a condition to prevent leakage.
 - C. Spray the aggregates with water.
 - D. Maintain a 10-mph speed limit in the yard.

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

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

Attachment B

Federally Enforceable State Operating Permit (FESOP) Renewal No: F141-36333-00027

[Downloaded from the eCFR on May 13, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart I—Standards of Performance for Hot Mix Asphalt Facilities

§ 60.90 Applicability and designation of affected facility.

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

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

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

§ 60.91 Definitions.

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

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

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

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

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

(2) Exhibit 20 percent opacity, or greater.

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

§ 60.93 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

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

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

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

[54 FR 6667, Feb. 14, 1989]

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

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

Source Background and Description
--

Source Name:	Rieth-Riley Construction Co., Inc.
Source Location:	25200 State Road 23, South Bend, IN 46614
County:	St. Joseph
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
Permit Renewal No.:	F141-36333-00027
Permit Reviewer:	Tamera Wessel

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Rieth-Riley Construction Co., Inc. relating to the operation of a stationary hot mix asphalt production plant. On September 28, 2015, Rieth-Riley Construction Co., Inc. submitted an application to the OAQ requesting to renew its operating permit. Rieth-Riley Construction Co., Inc. was issued its second FESOP Renewal F141-22022-00027 on June 30, 2006.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

- (a) One (1) aggregate rotary dryer and drum hot-mix unit (dryer/mixer), identified as DRUM, approved for construction in 2009, with a maximum capacity of four hundred fifty (450) tons of asphalt per hour, processing blast furnace slag, electric arc furnace steel mill slag, and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix, equipped with one (1) dryer/mixer burner, having a maximum heat input capacity of one hundred fifty (150) MMBtu per hour, firing waste oil as primary fuel, using No. 2 fuel oil, No. 4 fuel oil, natural gas, propane gas, and butane gas as backup fuels, equipped with a ninety thousand (90,000) actual cubic feet per minute (acfm) baghouse for particulate control and exhausting through Stack SV1. No shingles are ground at this source.

Under 40 CFR 60, Subpart I, this drum hot-mix asphalt operation is considered an affected facility.
- (b) One (1) hot oil heater, identified as 14A, constructed in 1988, with a maximum heat input capacity of 2.0 MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV2.
- (c) One (1) hot oil heater, identified as 14B, approved for construction in 2009, with a maximum heat input capacity of two (2.0) MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV10.
- (d) Two (2) tanks, identified as 13A and 13B, storing liquid asphalt, constructed in 1987, with a maximum capacity of 20,000 gallons each, and exhausting through Stacks SV5 and SV7.
- (e) One (1) tank, identified as 13C, storing liquid asphalt, constructed in 1965, with a maximum capacity 25,000 gallons, and exhausting through stack SV6.
- (f) One (1) tank for storing liquid asphalt, identified as 13D, approved for construction in 2008, with a maximum capacity of thirty thousand (30,000) gallons, and exhausting through Stack SV11.

- (g) One (1) tank, identified as 11, storing waste oil or No. 4 distillate oil, constructed in 1987, with a maximum capacity of 17,000 gallons, and exhausting through Stack SV8.
- (h) One (1) tank, identified as 12, storing No. 2 distillate oil, constructed in 1987, with a maximum capacity 25,000 gallons, and exhausting through stack SV9.
- (i) Cold-mix cutback asphalt production, constructed in 1988, with a maximum capacity of 372 tons of aggregate per hour.

Insignificant Activities

The source also consists of the following insignificant activities:

- (a) Two (2) A.C. tank heaters, firing No. 2 fuel oil as primary fuel, firing natural gas, propane gas and butane gas as backup fuels, with a maximum heat input capacity of 0.48 million British thermal units per hour, each.
- (b) The following VOC and HAP storage containers: vessels storing lubricating oil, hydraulic oils, machining oils, and machining fluids.

Existing Approvals

Since the issuance of the FESOP F141-22022-00027 on June 30, 2006, the source has constructed or has been operating under the following additional approvals:

- (a) Administrative Amendment No. 141-31916-00027 issued on July 9, 2012;
- (b) Significant Permit Revision No. 141-31513-00027 issued on June 27, 2012;
- (c) Significant Permit Revision No. 141-27607-00027 issued on September 24, 2010; and
- (d) Significant Permit Revision No. 141-27073-00027 issued on February 20, 2009.

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

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in St. Joseph County.

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

¹ Attainment effective October 18, 2000, for the 1-hour ozone standard for the South Bend-Elkhart area, including St. Joseph County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour standard was revoked effective June 15, 2005.

- (a) **Ozone Standards**
 Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. St. Joseph County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM_{2.5}**
 St. Joseph County has been classified as attainment for PM_{2.5}. Therefore, direct PM_{2.5}, SO₂, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) **Other Criteria Pollutants**
 St. Joseph 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 (40 CFR 60, Subpart I), therefore fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential Emissions	
Pollutant	Tons/year
PM	Greater than 250
PM ₁₀	Greater than 250
PM _{2.5}	Greater than 250
SO ₂	Greater than 250
NO _x	Greater than 100, less than 250
VOC	Greater than 250
CO	Greater than 250
Single HAP	Greater than 10
Total HAP	Greater than 25

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

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(30)) of all criteria pollutants is equal to or greater than 100 tons per year. However, the Permittee has agreed to limit the source's criteria pollutant emissions to less than Title V levels, therefore the Permittee will be issued a FESOP Renewal.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(30)) of any single HAP is equal to or greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(30)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. However, the Permittee has agreed to limit the source's single HAP emissions and total HAP emissions below Title V levels. Therefore, the Permittee will be issued a FESOP Renewal.

Potential to Emit After Issuance

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

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)								
	PM	PM ₁₀ *	PM _{2.5} **	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Dryer Fuel Combustion (worst case)	11.10	8.84	8.84	99.00	99.00	7.26	54.45	10.46	9.90 HCl
Dryer/Mixer (Process)	191.16	80.73	90.17			16.00	65.00	5.33	1.55 formaldehyde
Dryer/Mixer Slag Processing	0	0	0			0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	0.31	0.51	0.51			0.25	1.87	0.05	0.039 Hexane
Worst Case Emissions	191.47	81.24	90.68	99.00	99.00	16.25	66.87	10.51	9.90 HCl
Fugitive Emissions									
Asphalt Load-Out, Silo Filling, On-Site Yard	0.55	0.55	0.55	0	0	8.57	1.44	0.14	0.04 formaldehyde
Material Storage Piles	2.38	0.83	0.83	0	0	0	0	0	0
Material Processing and Handling	3.23	1.53	0.23	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	15.87	5.80	5.80	0	0	0	0	0	0
Paved and Unpaved Roads (worst case)	35.50	9.05	0.90	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	54.62	0	14.25	4.92 xylene
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl.	0	negl.	negl.
Total Fugitive Emissions	57.53	17.76	8.32	0	0	63.18	1.44	14.39	4.92 xylene
Total PTE of Entire Source	249.00	99.00	99.00	99.00	99.00	79.43	68.31	24.90	9.90 HCl
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA
Emission Offset/ Nonattainment NSR Major Source Thresholds	NA	NA	NA	NA	NA	NA	NA	NA	NA
negl. = negligible, HCl = hydrogen chloride * Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant". **PM _{2.5} listed is direct PM _{2.5} .									

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) FESOP and PSD Minor Status

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

(1) Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable, the Permittee shall comply with the following:

- (A) The amount of asphalt processed shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (B) The PM₁₀ emissions from the dryer/mixer shall not exceed 0.161 pounds per ton of asphalt processed. *This is a change from 0.146 pounds of PM10 per ton of asphalt processed. This is a Title I change.*
- (C) The PM_{2.5} emissions from the dryer/mixer shall not exceed 0.180 pounds per ton of asphalt processed. *This is a change from 0.179 pounds of PM2.5 per ton of asphalt processed. This is a Title I change.*
- (D) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.
- (E) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.

Compliance with these limits, combined with the potential to emit PM₁₀, PM_{2.5}, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM₁₀, PM_{2.5}, VOC, and CO to less than 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)), and 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable.

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

(A) Fuel and Slag Specifications

- (i) The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight.
- (ii) The sulfur content of the No. 4 fuel oil shall not exceed 0.5% by weight.
- (iii) The sulfur content of the waste or used fuel oil shall not exceed 1.00% by weight
- (iii) The waste oil combusted shall not contain more than 0.50% ash, 0.40% chlorine, and 0.01% lead.

The % ash and % lead limits are new requirements. This is a Title 1 change.

- (iv) The HCl emissions shall not exceed 26.4 pounds of HCl per 1,000 gallons of waste oil burned.
- (v) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.
- (vi) The SO₂ emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of blast furnace slag processed in the aggregate mix.
- (vi) The sulfur content of the steel slag shall not exceed 0.66% by weight.
- (vii) The SO₂ emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag processed in the aggregate mix.

(B) Single Fuel and Slag Usage Limitations:

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

- (i) Natural gas usage shall not exceed 1,007 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement. This change is required to render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD) not applicable. This is a Title I change.*
- (ii) No. 2 fuel oil usage shall not exceed 1,436,125 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement. This change is required to render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD) not applicable. This is a Title I change.*
- (iii) No. 4 fuel oil usage shall not exceed 1,359,531 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement. This change is required to render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD) not applicable. This is a Title I change.*

- (iv) Propane usage shall not exceed 14,519,337 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement. This change is required to render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD) not applicable. This is a Title I change.*
- (v) Butane usage shall not exceed 12,753,906 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement. This change is required to render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD) not applicable. This is a Title I change.*
- (iv) Waste oil usage shall not exceed 693,638 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement. This is a Title I change.*
- (v) The Blast Furnace slag usage shall not exceed 1,655,640 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement. This is a Title I change.*

Note: A steel slag usage limit is not required for the source to comply with their FESOP SO₂ Limit, since unlimited use results in a PTE SO₂ of only 1.16 tons per year. To form a conservative estimate, limited SO₂ emissions are based on the "worst case" assumption that steel slag usage corresponds to 100% of the aggregate used to produce hot-mix asphalt.

(C) Multiple Fuel and Slag Usage Limitation:

When combusting any single fuel or more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, hot oil heaters, and A.C. tank heaters, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer shall be limited as follows:

- (i) SO₂ emissions from the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and slag usage shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

$$SO_2 = \frac{G(E_G) + O(E_O) + F(E_F) + P(E_P) + B(E_B) + W(E_W) + BL(E_{BL}) + SL(E_{SL})}{2,000 \text{ lbs/ton}}$$

where:

- SO₂ = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in last 12 months
- F = gallons of No. 4 fuel oil used in last 12 months
- P = gallons of Propane used in last 12 months
- B = gallons of Butane used in last 12 months
- W = gallons of Waste oil used for last 12 months
- BL = tons of blast furnace slag used in the dryer/mixer in the last 12 months
- SL = tons of steel slag used in the dryer/mixer in the last 12 months
- E_G = 0.60 lb/million cubic feet of natural gas

$E_O = 71.00$ pounds/1000 gallons of No. 2 fuel oil
 $E_F = 75.00$ pounds/1000 gallons of No. 4 fuel oil
 $E_P = 0.02$ pounds/1000 gallons of Propane
 $E_B = 0.02$ pounds/1000 gallons of Butane
 $E_W = 147.0$ pounds/1000 gallons of waste oil
 $E_{BL} = 0.74$ lb/ton of blast furnace slag used
 $E_{SL} = 0.0014$ lb/ton of steel slag used

- (ii) NO_x emissions from the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and slag usage shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

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

where:

NO_x = tons of NO_x emissions for a 12-month consecutive period
 G = million cubic feet of natural gas used in the last 12 months
 O = gallons of No. 2 fuel oil used in last 12 months
 F = gallons of No. 4 fuel oil used in last 12 months
 P = gallons of Propane used in last 12 months
 B = gallons of Butane used in last 12 months
 W = gallons of Waste oil used for last 12 months
 E_G = 190 lb/million cubic feet of natural gas
 E_O = 24.00 pounds/1000 gallons of No. 2 fuel oil
 E_F = 47.00 pounds/1000 gallons of No. 4 fuel oil
 E_P = 13.00 pounds/1000 gallons of Propane
 E_B = 15.00 pounds/1000 gallons of Butane
 E_W = 19.00 pounds/1000 gallons of waste oil

- (iii) HCl emissions from the dryer/mixer burner shall not exceed 9.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

- (α) Waste oil usage with respect to the actual chlorine content shall be determined using the following equation:

$$U = \sum_{k=1}^n (W_A * Cl_A)$$

Where:

U = equivalent waste oil usage (gallons) in previous 12 consecutive months;
 n = total number of waste oil deliveries;
 k = each specific waste oil delivery;
 W_A = actual gallons of waste oil used from each specific waste oil delivery; and
 Cl_A = actual percent by weight chlorine content of waste oil for each specific waste oil delivery.

- (β) Hydrogen chloride (HCl) emissions shall be determined using the following equation:

$$HCl = \frac{U}{1000} \frac{(66.0)}{2000}$$

Where:

HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and

U = equivalent waste oil usage (gallons) as determined by the previous equation.

66.0 = Numeric multiplier from AP-42, Chapter 1.11, Table 1.11-3, for determining HCl emissions.

- (D) Asphalt Shingle Usage Limitation
Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use the following as an additive in its aggregate mix:
- (i) Certified asbestos-free factory second asphalt shingles;
 - (ii) Post consumer waste shingles generated at single family homes and/or residential buildings containing four or fewer dwelling units; and/or
 - (iii) Factory second shingles and/or post consumer waste shingles that have sampled negative for asbestos.

This requirement has been revised. This is a Title I change.

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

- (3) Pursuant to 326 IAC 2-8-4, the VOC emissions from cold-mix (cutback) asphalt production shall be limited as follows:
- (A) VOC emissions from the sum of the binders shall not exceed 54.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (B) Liquid binders used in the production of cold mix asphalt shall be defined as follows:
 - (i) Cutback asphalt rapid cure liquid binder usage shall not exceed 57.49 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 95% volatilization)

- (ii) Cutback asphalt medium cure liquid binder usage shall not exceed 78.03 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 70% volatilization)
 - (iii) Cutback asphalt slow cure liquid binder usage shall not exceed 218.48 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 25% volatilization)
 - (iv) Emulsified asphalt with solvent liquid binder usage shall not exceed 117.72 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 46.4% volatilization)
 - (v) Emulsified asphalt with fuel oil liquid binder usage shall not exceed 2,184.80 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. The fuel oil diluent shall be limited to 25.9% of the total weight of the emulsified asphalt mix. (Based on 2.5% volatilization)
- (C) When using more than one liquid binder per twelve (12) consecutive month period, VOC emissions shall be limited as follows:
- (i) The VOC solvent allotments in (C)(i) through (C)(v) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows.

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

Type of binder	Adjustment ratio
Cutback Asphalt Rapid Cure (95% volatilization)	1.053
Cutback Asphalt Medium Cure (70% volatilization)	1.429
Cutback Asphalt Slow Cure (25% volatilization)	4.000
Emulsified Asphalt (46.4% volatilization)	2.155
Emulsified Asphalt (2.5% volatilization)	40.000

The equivalent total tons of VOC emitted from the combined liquid binders shall be less than 54.62 tons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit VOCs and HAPs from all other emission units at this source, will limit source-wide VOC emissions to less than 100 tons per twelve (12) consecutive month period, any single HAP 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 the

requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants) not applicable.

The VOC emission limit and binder usage limits have been revised. This is a Title I change.

(b) PSD Minor Source – PM

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

- (1) The amount of hot-mix asphalt processed shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) PM emissions from the dryer/mixer shall not exceed 0.382 pounds per ton of asphalt processed.

This is a change from 0.322 pounds of PM per ton of asphalt produced. This is a Title I change.

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

Federal Rule Applicability

Compliance Assurance Monitoring (CAM)

- (a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

New Source Performance Standards (NSPS)

- (a) *40 CFR 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984*
The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, 40 CFR 60, Subpart Kb, are still not included in the permit for the following:
- (1) Two (2) tanks, identified as 13A and 13B, storing liquid asphalt, each with a capacity of 20,000 gallons;
 - (2) One (1) tank, identified as 13C, storing liquid asphalt, with a capacity of 25,000 gallons;
 - (3) One (1) tank, identified as 13D, storing liquid asphalt, with a capacity of 30,000 gallons; and
 - (4) One (1) tank, identified as 12, storing No. 2 distillate oil, with a capacity of 25,000 gallons.

Although each of these tanks has a storage capacity greater than the applicable capacity of 75 cubic meters (19,812 gallons) but less than 151 cubic meters (39,890 gallons), the materials stored in these tanks have a maximum true vapor pressure less than fifteen kilopascals (15 kPa). Therefore, pursuant to 40 CFR 60.110b(b), these tanks are exempt from this rule.

- (5) One (1) tank, identified as 11, storing waste oil or No. 4 distillate oil, with a capacity of 17,000 gallons.

This tank is not subject to this rule because the storage capacity of this tank is less than the applicable capacity of 75 cubic meters (19,812 gallons).

- (b) *40 CFR 60, Subparts K and Ka - Standards for Volatile Organic Liquid Storage Vessels*
The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels 40 CFR 60, Subpart Kb, are still not included in the permit for the following:

- (1) Two (2) tanks, identified as 13A and 13B, storing liquid asphalt, each with a capacity of 20,000 gallons;
- (2) One (1) tank, identified as 13C, storing liquid asphalt, with a capacity of 25,000 gallons;
- (3) One (1) tank, identified as 13D, storing liquid asphalt, with a capacity of 30,000 gallons; and
- (4) One (1) tank, identified as 12, storing No. 2 distillate oil, with a capacity of 25,000 gallons.

These tanks each have a capacity of less than 40,000 gallons.

- (c) *40 CFR 60, Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants*
The requirements of the Standards of Performance for Nonmetallic Mineral Processing Plants are still not included in the permit for the hot mix asphalt plant because pursuant to 40 CFR 60.670(a)(2)(b) facilities that are subject to 40 CFR 60, Subpart I, are not subject to the provisions of Subpart OOO.

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

The requirements of the Standards of Performance for Asphalt Processing and Asphalt Roofing are still not included in the permit for the hot mix asphalt plant since pursuant to 40 CFR 60.471, the stationary hot mix asphalt plant is not an asphalt processing plant because it does not blow asphalt, or an asphalt roofing plant because it does not produce asphalt roofing products, and pursuant to 40 CFR 60.101(a) the source 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.

- (e) *40 CFR 60, Subpart UUU - Standards of Performance for Calciners and Dryers in Mineral Industries*

The requirements of the Standards of Performance for Calciners and Dryers in Mineral Industries are still not included in the permit, since the hot mix asphalt plant is not a mineral processing plant, meaning that it does not process or produce any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

- (f) *40 CFR 60, Subpart I - Standards of Performance for Hot Mix Asphalt Facilities*

This hot mix asphalt plant is still subject to the New Source Performance Standard for Hot Mix Asphalt Facilities (40 CFR 60, Subpart I) because it meets the definition of a hot-mix asphalt facility pursuant to the rule and it was constructed after June 11, 1973.

The aggregate rotary dryer and drum hot-mix unit (dryer/mixer), identified as DRUM, is subject to the following portions of 40 CFR 60, Subpart I:

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

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

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

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

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (a) *40 CFR 63, Subpart DDDDD - NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters*
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD, are not included in the permit for the hot oil heaters, because this source is not a major source of HAPs.
- (b) *40 CFR 63, Subpart LLLLL - NESHAP: Asphalt Processing and Asphalt Roofing Manufacturing*
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL, are not included in the permit, since the hot mix asphalt plant is not a major source of HAPs, is not located at and is not part of a major source of HAP emissions, and does not engage in the preparation of asphalt flux or asphalt roofing materials.
- (c) *40 CFR , Subpart JJJJJ - NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources*
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJ (6J), 40 CFR 63, Subpart JJJJJ (6J), which is incorporated by reference as 326 IAC 20, are not included the permit for the drum/mixer burner, or hot oil heater, because although this source is an area source of hazardous air pollutants (HAP) as defined in §63.2, the drum/mixer burner and the hot oil heater are process heaters, and not boilers, as defined in 40 CFR 63.11237.
- (d) *40 CFR, Subpart AAAAAA - NESHAP for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing*
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart AAAAAA (7A), are not included the permit because although this source is an area source of hazardous air pollutant (HAP) emissions, as defined in §63.2, it does not meet the definition of an asphalt processing operation or an asphalt roofing manufacturing operation, as defined in §63.11566, since it does not engage in the preparation of asphalt flux or asphalt roofing materials.

- (e) There are no new National Emission Standards for Hazardous Air Pollutants (40 CFR Part 63), 326 IAC 14 and 326 IAC 20 included for this proposed revision.

State Rule Applicability - Entire Source

- (a) *326 IAC 2-2 (Prevention of Significant Deterioration (PSD))*
PSD applicability is discussed under the Potential to Emit (PTE) After Issuance of the FESOP section above.
- (b) *326 IAC 2-8-4 (FESOP)*
FESOP applicability is discussed under the PTE 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 of HAPs from the emission units is greater than ten (10) tons per year for any single HAP and/or greater than twenty-five (25) tons per year of a combination of HAPs. However, the source shall limit the potential to emit of HAPs 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 source is not subject to the requirements of 326 IAC 2-4.1. See PTE After Issuance of the FESOP Section above.
- (d) *326 IAC 2-6 (Emission Reporting)*
This source is not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an Operating Permit under 326 IAC 2-7, Part 70 Permit Program, and it does not emit lead in the ambient air at levels equal to or greater than five (5) tons per year, and it is not located in Lake or Porter County.
- (e) *326 IAC 5-1 (Opacity Limitations)*
Since this source is located in St. Joseph county, within the area north of Kern Road and east of Pine Road, 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 the permit:
- (1) Opacity shall not exceed an average of thirty percent (30%) 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.
- (f) *326 IAC 6-4 (Fugitive Dust Emissions)*
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).
- (g) *326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)*
This source is subject to this rule because it is a new source of particulate matter which did not receive all necessary preconstruction approvals before December 13, 1985, it is located in St. Joseph county, and and it requires a permit as set forth in 326 IAC 2.

State Rule Applicability – Individual Facilities

Drum Hot-Mix Asphalt Plant

- (a) **326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)**
The dryer burner is not a source of indirect heating, as defined in 326 IAC 1-2-19 "Combustion for Indirect Heating". Therefore, the requirements of 326 IAC 6-2 do not apply, and are not included in the permit.
- (b) **326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)**
Particulate emissions from this asphalt plant are subject to a more stringent particulate requirement in 326 IAC 6.5. Therefore, the asphalt plant is exempt from the requirements of 326 IAC 6-3.
- (c) **326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County)**
This existing asphalt plant has the potential to emit PM before controls greater than 100 tons per year and is located in St. Joseph County. Pursuant to 6.5-1-2(a), PM emissions from the dryer/mixer shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)).
- (d) **326 IAC 6.5-7-11 (Particulate Matter Limitations Except Lake County: St. Joseph County)**
A drum/mixer burner (ID #44P) is specifically listed in 326 IAC 6.5-7-11. However, this unit was removed from the source and replaced with the existing dryer/mixer in 2009. Therefore, the source is not subject to the requirements of 326 IAC 6.5-7-11 because the listed drum/mixer burner is no longer in operation at the source.
- (e) **326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)**
The dryer burner is subject to 326 IAC 7-1.1 because its potential to emit SO₂ is equal to or greater than twenty-five (25) tons/year, or ten (10) pounds/hour. Therefore, pursuant to this rule, sulfur dioxide emissions from the dryer burner shall be limited to:
- (A) Five-tenths (0.5) pounds per million Btu heat input for distillate oil combustion.
- (B) One and six tenths (1.6) pounds per million Btu heat input for residual oil.
- Note: No. 2 and No. 4 fuel oil are considered distillate oils and waste oil is considered residual oil.*
- (f) **326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)**
Pursuant to 326 IAC 7-2-1(c), the source shall 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.
- (g) **326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)**
The Permittee will limit VOC emissions to less than 25 tons per year to render 326 IAC 8-1-6 not applicable. In order to render the requirements of 326 IAC 8-1-6 not applicable, the dryer/mixer shall be limited as follows:
- (a) The amount of asphalt processed shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

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 the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable.

- (h) **326 IAC 8-6-1 (Organic Solvent Emission Limitations)**
The unlimited potential VOC emissions from the dryer/mixer are less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 8-6-1 (Organic Solvent Emission Limitations) do not apply to the hot-mix asphalt production and are not included in the permit.
- (i) There are no other 326 IAC 8 Rules that are applicable to the drum hot-mix asphalt plant.
- (j) **326 IAC 9-1 (Carbon Monoxide Emission Limits)**
This portable, drum hot-mix asphalt plant is not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 do not apply and are not included in the permit.
- (k) **326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)**
The dryer burner does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it has a maximum heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (Btu/hr); therefore, it is not subject to this rule and the requirements are not included in the permit.

Hot Oil/Asphalt Cement Heaters

- (a) **326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)**
The two (2) existing hot oil heaters and two (2) asphalt cement tank heaters meet the definition of indirect heating units, as defined in 326 IAC 1-2-19, since they combust fuel to produce usable heat that is 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. However, the requirements of 326 IAC 6-2 are not applicable to these emission units because they are subject to a more stringent particulate matter limit under 326 IAC 6.5 (Particulate Matter Limitations Except Lake County).
- (b) **326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County)**
This existing asphalt plant is located in St. Joseph County and has an unlimited potential to emit greater than one hundred (100) tons of particulate matter per year. The two (2) existing hot oil heaters and two (2) asphalt cement tank heaters are not specifically listed in 326 IAC 6.5-7-11 Pursuant to 326 IAC 6.5-1-2(a), particulate matter emissions from the two (2) existing hot oil heaters and two (2) asphalt cement tank heaters shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)), each.
- (c) **326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)**
The unlimited potential to emit SO₂ from the hot oil heaters and asphalt cement tank heaters are each less than twenty-five (25) tons/year, or ten (10) pounds/hour. Therefore, the requirements of 326 IAC 7-1.1 do not apply and are not included in the permit for this facility.
- (d) **326 IAC 9-1 (Carbon Monoxide Emission Limits)**
The hot oil heaters and asphalt cement tank heaters are not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 (Carbon Monoxide Emission Limits) do not apply and are not included in the permit.
- (e) **326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)**
The hot oil heaters and asphalt cement tank heaters do not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because the heaters each have a maximum heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu/hr). Therefore, the requirements of 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category) do not apply and are not included in the permit.

Storage Tanks

- (a) **326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)**
The potential to emit VOCs from each of the storage tanks are less than twenty-five (25) tons per year, therefore, the requirements of 326 IAC 8-1-6 do not apply and are not included in the permit.
- (b) **326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)**
The storage tanks have a maximum storage capacity of less than thirty-nine thousand (39,000) gallons, each. Therefore, the requirements of 326 IAC 8-4-3 do not apply to any of these tanks and are not included in the permit.
- (c) **326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)**
The liquid asphalt storage tanks and distillate oil storage tanks are each not subject to the requirements of this rule because the stationary source is not located in Clark, Floyd, Lake, or Porter County.

Cold-Mix Asphalt Production

- (a) **326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)**
Although the cold-mix asphalt production operation has potential VOC emissions greater than twenty-five (25) tons per year, the facility is not subject to 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities), because the cold-mix asphalt plant is subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operation: Asphalt Paving). Therefore, the requirements of 326 IAC 8-1-6 BACT do not apply and are not included in the permit.
- (b) **326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving Rules)**
Any paving application anywhere in the state is subject to the requirements of 326 IAC 8-5-2. Pursuant to 326 IAC 8-5-2, 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 as determined by ASTM D244-80a "Emulsific Asphalts" ASTM part 15, 1981 ASTM 1916 Race St., Philadelphia, PA 19103, Library of Congress Card Catalog #40-10712, for any paving application except as used for the following purposes:
 - 1. penetrating prime coating;
 - 2. stockpile storage;
 - 3. application during the months of November, December, January, February, and March.
- (c) **326 IAC 8-6-1 (Organic Solvent Emission Limitations)**
The cold-mix asphalt production operation has an unlimited potential VOC emissions greater than one hundred (100) tons per year, but is subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving Rules). Therefore, the requirements of 326 IAC 8-6-1 do not apply and are not included in the permit.

Compliance Determination and Monitoring Requirements

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

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

Compliance Determination Requirements

- (a) The dryer/mixer has applicable compliance determination conditions as specified below:
 - (1) In order to comply with the PM, PM10, and PM2.5 limitations in the permit, the baghouse for the dryer/mixer, shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
 - (2) The annual hot-mix asphalt production limit with associated recordkeeping and reporting will be used to ensure compliance with the PSD PM emissions limit, FESOP PM₁₀, PM_{2.5}, SO₂, NO_x, VOC, and CO emission limits, and the BACT avoidance VOC emission limit.
 - (3) The slag and fuel characteristics (i.e., sulfur content) and usage rates will be used to verify compliance with the SO₂ limitations.
 - (4) The waste oil characteristics (i.e., ash, chlorine, and lead content) and usage rates will be used to verify compliance with the FESOP PM, PM10, PM2.5, and HAP limitations.
- (b) The liquid binder characteristics (i.e., evaporation temperature) and usage rate, in the production of cold-mix cutback asphalt, will be used to verify compliance with the FESOP VOC and HAP emission limitations.

Compliance Monitoring Requirements

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

Emission Unit & Control Device	Parameter	Frequency	Range	Excursions and Exceedances
Dryer/mixer baghouse	Visible Emissions	Once per day	Normal/Abnormal	Response Steps

These monitoring conditions are necessary because the baghouse used in conjunction with the hot-mix dryer/mixer must operate properly to ensure continued compliance with 40 CFR 60, Subpart I, 326 IAC 2-8 (FESOP), 326 IAC 6.5 (Particulate Matter Limitations Except Lake County), and the limits that render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-7 (Part 70 Permits) not applicable.

Compliance Testing Requirements

- (a) The testing requirements applicable to this proposed revision are as follows:

Emission Unit	Control Device	Pollutant	Timeframe for Testing	Frequency of Testing
Dryer/mixer	Baghouse	PM/PM10/PM2.5	Not later than five (5) years from the last valid compliance demonstration	Once every five (5) years
Dryer/mixer	N/A	SO2	Not later than 180 days after initial use of Blast Furnace slag ⁽¹⁾	One time test

(1) Testing shall only be performed if the company has not previously performed SO₂ testing while using Blast Furnace slag in the aggregate mix at one of their other Indiana facilities.

PM, PM₁₀, and PM_{2.5} testing is needed in order to demonstrate compliance with FESOP limits under 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, and particulate matter limitations under 326 IAC 6.5 (Particulate Matter Limitations Except Lake County).

Proposed Changes

The following changes listed below have been made during this FESOP Renewal. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text:

Section D.1 – PSD Minor limits, FESOP limits, PM10, PM2.5, SO2, and NOx limitations, Single Fuel and Slag Usage Limitations and the Multiple Fuel and Slag Usage Limits have been revised to simplify compliance determination equations. Additionally, Compliance Determination, Compliance Monitoring, Recordkeeping Requirements and Reporting Requirements have been revised.

Section D.2 – Cold-mix asphalt limits have been separated into a new section.

Condition D.1.16 - Parametric Monitoring has been removed from the permit since the source is required to perform visible emission notations of the dryer/mixer baghouse stack exhaust in accordance with Condition D.1.15. IDEM, OAQ currently does not require two compliance monitoring methods for a single control device.

The FESOP Reporting Forms located at the back of the permit have been updated to reflect the revised limits of this TSD.

Additional typographical errors have been corrected.

Due to the United States Supreme Court Ruling (*Utility Air Regulatory Group v. EPA*, cause no. 12-1146), IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification. Therefore, GHG emissions limits have been removed.

SECTION D.1 FACILITY OPERATION CONDITIONS

~~Facility Description [326 IAC 2-8-4(10)]:~~ Hot Mix Asphalt

(a) ~~One (1) aggregate rotary dryer and drum hot-mix unit (dryer/mixer), identified as DRUM, approved for construction in 2009, with a maximum capacity of four hundred fifty (450) tons of asphalt per hour, processing blast furnace slag, electric arc furnace steel mill slag, and certified asbestos-free factory second and/or post-consumer waste shingles in the aggregate mix,~~

~~equipped with one (1) dryer/mixer burner, having a maximum heat input capacity of one hundred fifty (150) MMBtu per hour, firing waste oil as primary fuel, using No. 2 fuel oil, No. 4 fuel oil, natural gas, propane gas, and butane gas as backup fuels, equipped with a ninety thousand (90,000) actual cubic feet per minute (acfm) baghouse for particulate control and exhausting through Stack SV1. No shingles are ground at this source.~~

- ~~(b) One (1) hot oil heater, identified as 14A, constructed in 1988, with a maximum heat input capacity of 2.0 MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV2.~~
- ~~(c) One (1) hot oil heater, identified as 14B, approved for construction in 2009, with a maximum heat input capacity of two (2.0) MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV10.~~
- ~~(d) Two (2) tanks, identified as 13A and 13B, storing liquid asphalt, constructed in 1987, with a maximum capacity of 20,000 gallons each, and exhausting through Stacks SV5 and SV7.~~
- ~~(e) One (1) tank, identified as 13C, storing liquid asphalt, constructed in 1965, with a maximum capacity 25,000 gallons, and exhausting through stack SV6.~~
- ~~(f) One (1) tank for storing liquid asphalt, identified as 13D, approved for construction in 2008, with a maximum capacity of thirty thousand (30,000) gallons, and exhausting through Stack SV11.~~
- ~~(g) One (1) tank, identified as 11, storing waste oil or No. 4 distillate oil, constructed in 1987, with a maximum capacity of 17,000 gallons, and exhausting through Stack SV8.~~
- ~~(h) One (1) tank, identified as 12, storing No. 2 distillate oil, constructed in 1987, with a maximum capacity 25,000 gallons, and exhausting through stack SV9.~~
- ~~(i) Cold-mix cutback asphalt production, constructed in 1988, with a maximum capacity of 372 tons of aggregate per hour.~~

~~Under 40 CFR 60, Subpart I, this is considered an affected facility.~~

~~Insignificant Activities~~

- ~~(a) Two (2) A.C. tank heaters, firing No. 2 fuel oil as primary fuel, firing natural gas, propane gas and butane gas as backup fuels, with a maximum heat input capacity of 0.48 million British thermal units per hour, each.~~

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

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

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

~~In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:~~

- ~~(a) The asphalt production rate shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.~~
- ~~(b) PM emissions from the dryer/mixer shall not exceed 0.322 pounds of PM per ton of asphalt produced.~~

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

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

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

- ~~(a) The asphalt production rate shall not exceed 1,000,000 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 0.146 pounds of PM10 per ton of asphalt produced.~~
- ~~(c) PM2.5 emissions from the dryer/mixer shall not exceed 0.179 pounds of PM2.5 per ton of asphalt produced.~~
- ~~(d) CO emissions from the dryer/mixer shall not exceed 0.13 pounds of CO per ton of asphalt produced.~~
- ~~(e) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds of VOC per ton of asphalt produced.~~

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

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

~~D.1.3 Particulate Matter (PM) [326 IAC 6.5-1-2]~~

~~Pursuant to 326 IAC 6.5-1-2 (Particulate Matter Limitations Except Lake County), particulate matter (PM) emissions from the dryer/mixer, hot oil heaters, and A.C. tank heaters shall not exceed 0.03 grain per dry standard cubic foot of exhaust air, each.~~

~~D.1.4 SO₂, NO_x, VOC, CO_{2e} and HAPs Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]~~

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

~~(a) Sulfur Content and Waste Oil Specifications~~

- ~~(1) The 30 day calendar month average sulfur content of the blast furnace slag shall not exceed 1.5 percent by weight, with compliance determined at the end of each month.~~
- ~~(2) SO₂ emissions from blast furnace slag used in the dryer/mixer shall not exceed 0.5413 pounds of SO₂ per ton of blast furnace slag processed, when the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight.~~
- ~~(3) SO₂ emissions from blast furnace slag used in the dryer/mixer shall not exceed 0.74 pounds of SO₂ per ton of blast furnace slag processed, when the 30 day calendar month average sulfur content is greater than 1.11 percent by weight.~~
- ~~(4) The sulfur content of the electric arc furnace steel mill slag shall not exceed 0.66 percent by weight.~~

- (5) ~~SO₂ emissions from the electric arc furnace steel mill slag used in the dryer/mixer shall not exceed 0.0014 pounds of SO₂ per ton of electric arc furnace steel mill slag processed.~~
- (6) ~~The sulfur content of the No. 2 fuel oil shall not exceed 0.5 percent by weight.~~
- (7) ~~The sulfur content of the No. 4 fuel oil shall not exceed 0.5 percent by weight.~~
- (8) ~~The sulfur content of the waste oil shall not exceed 1.0 percent by weight.~~
- (9) ~~The chlorine content of the waste oil shall not exceed 0.4 percent by weight.~~
- (10) ~~HCl emissions from the dryer/mixer shall not exceed 0.0264 pounds of HCl per gallon of waste oil burned.~~
- (b) ~~SO₂ emissions from the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and blast furnace and electric arc furnace steel mill slag processing shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.~~
- (c) ~~NO_x emissions from the dryer/mixer burner, hot oil heaters, and A.C. tank heaters shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.~~
- (d) ~~VOC emissions from the sum of the binders shall not exceed 51.28 tons per twelve (12) consecutive month period with compliance determined at the end of each month.~~
- (e) ~~Liquid binder used in the production of cold mix asphalt shall be defined as follows:~~
 - (1) ~~Cut back asphalt rapid cure, containing a maximum of 25.3% by weight of VOC solvent in the liquid binder and 95% by weight of VOC solvent evaporating.~~
 - (2) ~~Cut back asphalt medium cure, containing a maximum of 28.6% by weight of VOC solvent in the liquid binder and 70% by weight of VOC solvent evaporating.~~
 - (3) ~~Cut back asphalt slow cure, containing a maximum of 20% by weight of VOC solvent in the liquid binder and 25% by weight of VOC solvent evaporating.~~
 - (4) ~~Emulsified asphalt with solvent, containing a maximum of 15% by weight of VOC solvent in the liquid binder and 46.4% by weight of VOC solvent evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be 7% or less of the total emulsion by volume~~
 - (5) ~~Other asphalt with solvent binder, containing a maximum of 25.9% by weight of VOC solvent in the liquid binder and 2.5% by weight of VOC solvent evaporating. This definition applies to any other asphalt with solvent binder that does not have distillation data available as determined by ASTM Method D-402, Distillation of Cutback Asphalt Products.~~
 - (6) ~~Rieth-Riley other asphalt with solvent binder, cutback asphalt that has distillation data available as determined by ASTM Method D-402, Distillation of Cutback Asphalt Products.~~
- (f) ~~HCl emissions from the dryer/mixer burner shall not exceed 9.9 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.~~

~~(g) The Permittee shall use only certified asbestos-free factory second and/or post-consumer waste shingles as an additive in its aggregate mix.~~

~~(h) CO₂ equivalent emissions (CO₂e) from the dryer/mixer shall not exceed 95,328 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.~~

~~Compliance with these limits, combined with the limited potential to emit SO₂, NO_x, VOC, CO₂e and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO₂, NO_x, and VOC to less than 100 tons per 12 consecutive month period, each, GHGs to less than 100,000 tons of CO₂ equivalent emissions (CO₂e), any single HAP to less than 10 tons per 12 consecutive month period, and any combination of HAPs to less than 25 tons per 12 consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) 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 0.5 pounds per MMBtu when using distillate oil.~~

~~(b) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed 1.60 pounds per MMBtu heat input when using residual 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 8-5-2]~~

~~Pursuant to 326 IAC 8-5-2, Volatile Organic Compound Rules for Asphalt Pavers, the cutback asphalt or asphalt emulsions produced by the source shall not contain more than seven percent (7%) oil distillate by volume of emulsion as determined by ASTM D244-80a "Emulsific Asphalts" ASTM part 15, 1981 ASTM 1916 Race St., Philadelphia, PA 19103, Library of Congress Card Catalog #40-10712, for any paving application except as used for the following purposes:~~

~~(a) penetrating prime coating;~~

~~(b) stockpile storage;~~

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

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

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

Compliance Determination Requirements

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

~~(a) In order to demonstrate compliance with Conditions D.1.1(b) and D.1.3, the Permittee shall perform PM testing of the dryer/mixer not later than five (5) years from the date of the most recent valid compliance demonstration. This testing shall be conducted utilizing methods approved by the Commissioner and shall be repeated at least once every five~~

~~(5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C—Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.~~

- ~~(b) In order to demonstrate compliance with Conditions D.1.2(b) and D.1.2(c), the Permittee shall perform PM10 and PM2.5 testing on the dryer/mixer no later than 180 days after promulgation 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 (PM2.5), signed on May 8th, 2008 or not later than five (5) years from the date of the most recent valid compliance demonstration, whichever is later. This testing shall be conducted utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C—Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.~~

D.1.9 Particulate Control

- ~~(a) In order to comply with Conditions D.1.1, D.1.2, and D.1.3 the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times that 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

- ~~(a) Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.4(a)(1) shall be determined utilizing one of the following options:~~
- ~~(1) Providing vendor analysis of blast furnace slag delivered, if accompanied by a vendor certification; or~~
 - ~~(2) Analyzing a sample of the blast furnace slag delivery to determine the sulfur content of the slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.~~
- ~~A determination of noncompliance pursuant to any of the methods specified in (1) or (2) above shall not be refuted by evidence of compliance pursuant to the other method.~~
- ~~(b) Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.4(a)(4) shall be determined utilizing one of the following options:~~
- ~~(1) Providing vendor analysis of electric arc furnace steel mill slag delivered, if accompanied by a vendor certification; or~~
 - ~~(2) Analyzing a sample of the electric arc furnace steel mill slag delivery to determine the sulfur content of the electric arc furnace steel mill slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60,~~

~~40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.~~

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

~~(c) Pursuant to 326 IAC 3-7-4, compliance with Conditions D.1.4(a)(6), D.1.4(a)(7), D.1.4(a)(8), D.1.5(a), and D.1.5(b) shall be demonstrated utilizing one of the following options:~~

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

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

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

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

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

~~A determination of noncompliance pursuant to any of the methods specified in (1), (2), or (3) above shall not be refuted by evidence of compliance pursuant to the other method.~~

D.1.11 Asphalt, Fuel, and Slag Limitations

~~In order to comply with Condition D.1.4, the Permittee shall limit asphalt production, fuel usage in the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and slag usage in the dryer/mixer burner according to the following formulas:~~

~~(a) When the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight, the blast furnace slag usage shall be determined using the following equation:~~

$$L = \sum_{i=1}^m (J)$$

Where:

~~L = blast furnace slag usage in previous 12 consecutive months with an average sulfur content less than or equal to 1.11 percent by weight;~~

~~m = total number of months where the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight;~~

~~i = each specific month where the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight; and~~

~~J = actual tons of blast furnace slag used per month where the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight.~~

~~(b) When the 30 day calendar month average sulfur content is greater than 1.11 percent by weight but less than or equal to 1.5 percent by weight, the blast furnace slag usage shall be determined using the following equation:~~

$$X = \sum_{b=1}^a (K)$$

Where:

X = blast furnace slag usage in previous 12 consecutive months with an average sulfur content greater than 1.11 percent by weight;
a = total number of months where the 30 day calendar month average sulfur content is greater than 1.11 percent by weight;
b = each specific month where the 30 day calendar month average sulfur content is greater than 1.11 percent by weight; and
K = actual tons of blast furnace slag used per month where the 30 day calendar month average sulfur content is greater than 1.11 percent by weight but less than or equal to 1.5 percent by weight.

- (c) — Waste oil usage with respect to the actual sulfur content shall be determined using the following equation:

$$U = \sum_{e=1}^d (W_A \times S_A)$$

Where:

U = waste oil usage in previous 12 consecutive months;
d = total number of waste oil deliveries;
e = each specific waste oil delivery;
W_A = actual gallons of waste oil used from each specific waste oil delivery; and
S_A = actual percent by weight sulfur content of waste oil for each specific waste oil delivery.

- (d) — Sulfur dioxide (SO₂) emissions shall be determined using the following equation:

$$S = \frac{[G(0.6) + O(0.071) + F(0.075) + P(0.00002) + B(0.00002) + U(0.147) + A(0.0014) + L(0.5413) + X(0.74)]}{2000}$$

Where:

S = tons of sulfur dioxide emissions for previous 12 consecutive month period;
G = million cubic feet of natural gas used in dryer/mixer and heaters in previous 12 months;
O = gallons of No. 2 fuel oil used in dryer/mixer and heaters in previous 12 months;
F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months;
P = gallons of propane used in dryer/mixer and heaters in previous 12 months;
B = gallons of butane used in dryer/mixer and heaters in previous 12 months;
U = gallons of waste oil as defined by Condition D.1.12(c);
A = tons of electric arc furnace steel mill slag used in dryer/mixer in previous 12 months;
L = tons of blast furnace slag as defined by Condition D.1.12(a); and
X = tons of blast furnace slag as defined by Condition D.1.12(b).

Natural Gas (dryer/mixer/heaters) = 0.6 pounds per million cubic feet of natural gas;
No. 2 Fuel Oil (dryer/mixer/heaters) = 0.071 pounds per gallon of No. 2 fuel oil;
No. 4 Fuel Oil (dryer/mixer) = 0.075 pounds per gallon of No. 4 fuel oil;
Propane (dryer/mixer/heaters) = 0.00002 pounds per gallon of propane;
Butane (dryer/mixer/heaters) = 0.00002 pounds per gallon of butane;
Waste Oil (dryer/mixer) = 0.147 pounds per gallon of waste oil;
Electric Arc Furnace Steel Mill Slag = 0.0014 pounds per ton of electric arc furnace steel mill slag processed; and

~~Blast Furnace Slag = 0.5413 pounds per ton of blast furnace slag processed, with a 30 day calendar month average sulfur content less than or equal to 1.11 percent by weight or 0.74 pounds per ton of blast furnace slag processed, with a 30 day calendar month average sulfur content greater than 1.11 percent by weight but less than or equal to 1.5 percent by weight.~~

(e) ~~Nitrogen oxide (NOx) emissions shall be determined using the following equation:~~

$$N = \frac{[H(0.02) + G(190) + GH(100) + O(0.024) + F(0.047) + P(0.013) + B(0.015) + U(0.019)]}{2000}$$

Where:

~~N = tons of nitrogen oxide emissions for previous 12 consecutive month period;
H = gallons of No. 2 fuel oil used in heaters in previous 12 months;
G = million cubic feet of natural gas used in dryer/mixer in previous 12 months;
GH = million cubic feet of natural gas used in heaters in previous 12 months;
O = gallons of No. 2 fuel oil used in dryer/mixer in previous 12 months;
F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months;
P = gallons of propane used in dryer/mixer and heaters in previous 12 months;
B = gallons of butane used in dryer/mixer and heaters in previous 12 months; and
U = gallons of waste oil used in dryer/mixer in previous 12 months.~~

~~No. 2 Fuel Oil (heaters) = 0.02 pounds per gallon of No. 2 fuel oil;
Natural Gas (dryer/mixer) = 190 pounds per million cubic feet of natural gas;
Natural Gas (heaters) = 100 pounds per million cubic feet of natural gas;
No. 2 Fuel Oil (dryer/mixer) = 0.024 pounds per gallon of No. 2 fuel oil;
No. 4 Fuel Oil (dryer/mixer) = 0.047 pounds per gallon of No. 4 fuel oil;
Propane (dryer/mixer/heaters) = 0.013 pounds per gallon of propane;
Butane (dryer/mixer/heaters) = 0.015 pounds per gallon of butane; and
Waste Oil (dryer/mixer) = 0.019 pounds per gallon of waste oil.~~

(f) ~~VOC emissions from cold mix asphalt production shall be determined using the following equation:~~

$$V_{cm} = \left(\frac{S}{AF} \right) + \sum_{i=1}^n [C \times (B : 100) \times (D : 100) \times (V : 100)]$$

Where:

~~V_{cm} = tons of VOC emissions from cold mix asphalt production in previous 12 month consecutive period;
S = tons of VOC solvent used for each binder as defined in D.1.4(e)(1) through (5) in previous 12 months; and
AF = Adjustment factor for each type of liquid binder as defined in D.1.4(e)(1) through (5);
n = total number of binders used in the production of cold mix asphalt as defined in D.1.4(e)(6);
i = each binder used in the production of cold mix asphalt as defined in D.1.4(e)(6);
C = tons of cold mix asphalt produced using each binder as defined in D.1.4(e)(6) in previous 12 months;
B = Percent of binder used in cold mix asphalt for each binder as defined in D.1.4(e)(6);
D = Percent solvent in each binder as defined in D.1.4(e)(6); and
V = Percent of VOC from the solvent that evaporates when heated to 500°F for each binder as defined in D.1.4(e)(6). This shall be determined by using distillation data provided by the vendor or based on a distillation test performed by the source.~~

Adjustment Factors:

Cutback Asphalt Rapid Cure Adjustment Factor = 1.053;
 Cutback Asphalt Medium Cure Adjustment Factor = 1.429;
 Cutback Asphalt Slow Cure Adjustment Factor = 4.0;
 Emulsified Asphalt with Liquid Binder Adjustment Factor = 2.155; and
 Other Asphalt with Liquid Binder Adjustment Factor = 40.0

- (g) ~~Waste oil usage with respect to the actual chlorine content shall be determined using the following equation:~~

$$U = \sum_{k=1}^n (W_A \times Cl_A)$$

Where:

~~U = waste oil usage in previous 12 consecutive months;
 n = total number of waste oil deliveries;
 k = each specific waste oil delivery;
 W_A = actual gallons of waste oil used from each specific waste oil delivery; and
 Cl_A = actual percent by weight chlorine content of waste oil for each specific waste oil delivery.~~

- (h) ~~Hydrogen Chloride (HCl) emissions shall be determined using the following equation:~~

$$HCl = \frac{U(0.066)}{2000}$$

Where:

~~HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and
 U = gallons of waste oil as defined in Condition D.1.12(g).~~

~~Waste Oil = 0.066 pounds per gallon of waste oil.~~

- (i) ~~Carbon Dioxide Equivalent (CO₂e) emissions calculation:~~

$$CO_2 = \frac{G(EG_{CO_2}) + O(EO_{CO_2}) + F(EF_{CO_2}) + P(EP_{CO_2}) + B(EB_{CO_2}) + W(EW_{CO_2})}{2,000 \text{ lbs/ton}}$$

$$CH_4 = \frac{G(EG_{CH_4}) + O(EO_{CH_4}) + F(EF_{CH_4}) + P(EP_{CH_4}) + B(EB_{CH_4}) + W(EW_{CH_4})}{2,000 \text{ lbs/ton}}$$

$$N_2O = \frac{G(EG_{N_2O}) + O(EO_{N_2O}) + F(EF_{N_2O}) + P(EP_{N_2O}) + B(EB_{N_2O}) + W(EW_{N_2O})}{2,000 \text{ lbs/ton}}$$

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

Where:

~~CO₂ = tons of CO₂ emissions for previous 12 consecutive month period
 CH₄ = tons of CH₄ emissions for previous 12 consecutive month period
 N₂O = tons of N₂O emissions for previous 12 consecutive month period
 CO₂e = tons of CO₂e equivalent emissions for previous 12 consecutive month period
 G = million cubic feet of natural gas used in previous 12 months
 O = gallons of No. 2 fuel oil used in previous 12 months
 F = gallons of No. 4 fuel oil used in previous 12 months~~

~~P = gallons of propane used in previous 12 months
B = gallons of butane used in previous 12 months
W = gallons of used/waste oil used in previous 12 months~~

~~CO₂:~~

~~EG_{CO2} = 120,162 pounds per million cubic feet of natural gas
EO_{CO2} = 22,501 pounds per 1,000 gallons of No. 2 fuel oil
EF_{CO2} = 24,153 pounds per 1,000 gallons of No. 4 fuel oil
EP_{CO2} = 12,500 pounds per 1,000 gallons of propane
EB_{CO2} = 14,506 pounds per 1,000 gallons of butane
EW_{CO2} = 22,024 pounds per 1,000 gallons of used/waste oil~~

~~CH₄:~~

~~EG_{CH4} = 2.4 pounds per million cubic feet of natural gas
EO_{CH4} = 0.91 pounds per 1,000 gallons of No. 2 fuel oil
EF_{CH4} = 0.97 pounds per 1,000 gallons of No. 4 fuel oil
EP_{CH4} = 0.6 pounds per 1,000 gallons of propane
EB_{CH4} = 0.67 pounds per 1,000 gallons of butane
EW_{CH4} = 0.89 pounds per 1,000 gallons of used/waste oil~~

~~N₂O:~~

~~EG_{N2O} = 2.2 pounds per million cubic feet of natural gas
EO_{N2O} = 0.26 pounds per 1,000 gallons of No. 2 fuel oil
EF_{N2O} = 0.19 pounds per 1,000 gallons of No. 4 fuel oil
EP_{N2O} = 0.90 pounds per 1,000 gallons of propane
EB_{N2O} = 0.90 pounds per 1,000 gallons of butane
EW_{N2O} = 0.18 pounds per 1,000 gallons of used/waste oil~~

~~Global Warming Potentials (GWP)~~

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

D.1.12 Cold Mix Asphalt Content

~~In order to comply with Condition D.1.4(e)(6), the Permittee shall demonstrate the percent of VOC from the solvent that evaporates in the binder when heated to 500°F for each binder used in the production of cold mix asphalt as defined in D.1.4(e)(6) as follows:~~

- ~~(a) Providing distillation data as determined by ASTM Method D-402, Distillation of Cutback Asphalt Products for the binder, if accompanied by a vendor certification; or~~
- ~~(b) Analyzing a sample of the binder to determine the percent of VOC from the solvent that evaporates in the binder when heated to 500°F, utilizing ASTM Method D-402, Distillation of Cutback Asphalt Products or other procedures approved by IDEM, OAQ.~~

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

D.1.13 Hydrogen Chloride (HCl) Emissions and Chlorine Content

~~In order to comply with Condition D.1.4(a)(9), the Permittee shall demonstrate that the chlorine content of the waste oil combusted in the dryer/mixer burner does not exceed forty hundredths of a percent (0.40%) by weight, by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.~~

D.1.14 Asbestos Content

~~Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.4(g) shall be determined utilizing one of the following options:~~

- ~~(a) — Providing shingle supplier certification that the factory second and/or post consumer waste shingles do not contain asbestos; or~~
- ~~(b) — Analyzing a sample of the factory second and/or post consumer waste shingles delivery to determine the asbestos content of the factory second shingles, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.~~

~~A determination of noncompliance pursuant to any of the methods specified above shall not be refuted by evidence of compliance pursuant to the other method.~~

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

~~D.1.15 Visible Emissions Notations~~

- ~~(a) — Visible emission notations of the dryer/mixer stack (SV1) exhaust shall be performed at least once per day during normal daylight operations when exhausting to the atmosphere. 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 is are observed, the Permittee shall take reasonable response steps. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.~~

~~D.1.16 Parametric Monitoring~~

~~The Permittee shall record the pressure drop across the baghouses used in conjunction with the dryer/mixer, at least once per day when dryer/mixer is in operation. When, for any one reading, the pressure drop across the baghouse is outside of the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 2.0 and 8.0 inches of water, unless a different upper bound or lower bound value for this range is determined during the latest stack test. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside of the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.~~

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

~~D.1.17 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 emission unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).~~

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

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

~~D.1.18 Record Keeping Requirements~~

- (a) ~~To document the compliance status with Conditions D.1.1(a) and D.1.2(a) the Permittee shall maintain monthly records of the amount of asphalt processed through the dryer/mixer.~~
- (b) ~~To document the compliance status with Conditions D.1.4(a), D.1.4(b), D.1.4(c), D.1.4(f), D.1.4(g), and D.1.5, the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.4(a), D.1.4(b), D.1.4(c), D.1.4(f), D.1.4(g), and D.1.5.~~
- (1) ~~Calendar dates covered in the compliance determination period;~~
- (2) ~~Actual blast furnace and electric arc furnace steel mill slag usage, sulfur content and equivalent sulfur dioxide emission rates for all blast furnace and electric arc furnace steel mill slag used at the source since the last compliance determination period;~~
- (3) ~~A certification, signed by the owner or operator, that the records of the blast furnace and electric arc furnace steel mill slag supplier certifications represent all of the blast furnace and electric arc furnace steel mill slag used during the period; and~~
- (4) ~~If the slag supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:~~
- (i) ~~Blast furnace and electric arc furnace steel mill slag supplier certifications;~~
- (ii) ~~The name of the blast furnace and electric arc furnace steel mill slag supplier; and~~
- (iii) ~~A statement from the blast furnace and electric arc furnace steel mill slag supplier that certifies the sulfur content of the blast furnace and electric arc furnace steel mill slag.~~

- ~~(5) — Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide and nitrogen oxide emission rates for each fuel used at the source since the last compliance determination period;~~
- ~~(6) — Actual waste oil usage, chlorine content, and equivalent hydrogen chloride emission rate for waste oil used at the source since the last compliance determination period;~~
- ~~(7) — 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~~
- ~~(8) — If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - ~~(i) — Fuel supplier certifications;~~
 - ~~(ii) — The name of the fuel supplier; and~~
 - ~~(iii) — A statement from the fuel supplier that certifies the sulfur content of the No. 2 and No. 4 fuel oils, diesel fuel, and waste oil, and the chlorine content of waste oil.~~~~
- ~~(9) — A certification, signed by the owner or operator, that the records of the shingle supplier certifications represent all of the shingles used; and~~
- ~~(10) — If the shingle supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - ~~(i) — Shingle supplier certifications;~~
 - ~~(ii) — The name of the shingle supplier(s); and~~
 - ~~(iii) — A statement from the shingle supplier(s) that certifies the asbestos content of the shingles from their company.~~~~
- ~~(c) — To document the compliance status with Conditions D.1.4(d) and D.1.4(e)(1) through (5), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.1.4(d) and D.1.4(e)(1) through (5).
 - ~~(1) — Calendar dates covered in the compliance determination period;~~
 - ~~(2) — Cutback asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;~~
 - ~~(3) — VOC solvent content by weight of the cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and~~
 - ~~(4) — Amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.~~~~

Records may include: delivery tickets, manufacturer's data, material safety data sheets (MSDS), and other documents necessary to verify the type and amount used. Test

~~results of ASTM tests for asphalt cutback and asphalt emulsion may be used to document volatilization.~~

~~(d) — To document the compliance status with Conditions D.1.4(d) and D.1.4(e)(6), the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.1.4(d) and D.1.4(e)(6).~~

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

~~(2) — Mix temperature of cold mix asphalt produced since the last compliance determination period;~~

~~(3) — Amount of cold mix asphalt produced since the last compliance determination period;~~

~~(4) — Percent of cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period;~~

~~(5) — Percent of solvent in the cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and~~

~~(6) — Evaporation rate of the solvent in the cutback asphalt binder used in production of cold mix asphalt since the last compliance determination period and the amount of VOC emitted since the last compliance determination period.~~

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

~~(e) — To document the compliance status with Condition D.1.4(h), the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) shall be taken monthly and shall be complete and sufficient to establish compliance with the CO₂e emission limits established in Condition D.1.4(i).~~

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

~~(2) — Actual fuel oil usage each month;~~

~~(3) — Actual natural gas usage each month;~~

~~(6) — Equivalent carbon dioxide equivalent (CO₂e) emission rates for each fuel used at the source per month;~~

~~(7) — 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, when burning alternate fuels and not determining compliance pursuant to 326 IAC 3-7-4, the following, as a minimum, shall be maintained:~~

~~(8) — Fuel supplier certifications;~~

~~(9) — The name of the fuel supplier; and~~

- ~~(10) — A statement from the fuel supplier that certifies the sulfur content of the fuel oil.~~
- ~~(f) — To document the compliance status with Condition D.1.14, the Permittee shall maintain records of visible emission notations of the dryer/mixer stack exhaust (SV1) at least once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the plant did not operate that day).~~
- ~~(g) — To document the compliance status with Condition D.1.15, the Permittee shall maintain a daily record 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).~~
- ~~(h) — Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.~~

D.1.19 Reporting Requirements

~~A quarterly summary of the information to document the compliance status with Conditions D.1.1(a), D.1.2(a), D.1.4(h) and D.1.4 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require the certification that meet the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).~~

...

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

FESOP Quarterly Report
 Page 1 of 3

Source Name: Rieth-Riley Construction Co., Inc.
 Source Address: 25200 State Road 23, South Bend, Indiana 46614
 FESOP Permit No.: F141-22022-00027
 Facility: Dryer/mixer burner, hot oil heaters, A.C. tank heaters, and blast furnace and electric arc furnace steel mill slag processing
 Parameter: SO2 and NOx emissions
 Limit: SO2 emissions from the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and blast furnace and EAF steel mill slag processing shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and NOx emissions from the dryer/mixer burner, hot oil heaters, and A.C. tank heaters shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Sulfur dioxide (SO2) emissions shall be determined using the following equation:

$$S = \frac{[G(0.6) + O(0.071) + F(0.075) + P(0.00002) + B(0.00002) + U(0.147) + A(0.0014) + L(0.5413) + X(0.74)]}{2000}$$

<p><u>Where:</u> S = tons of sulfur dioxide emissions for previous 12 consecutive month period; G = million cubic feet of natural gas used in dryer/mixer in previous 12 months; O = gallons of No. 2 fuel oil used in dryer/mixer and heaters in previous 12 months; F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months; P = gallons of propane used in dryer/mixer and heaters in previous 12 months; B = gallons of butane used in dryer/mixer and heaters in previous 12 months; U = gallons of waste oil as defined by Condition D.1.12(c); A = tons of EAF steel mill slag used in dryer/mixer in previous 12 months; L = tons of blast furnace slag as defined by Condition D.1.12(a); and X = tons of blast furnace slag as defined by Condition D.1.12(b).</p>	<p><u>Emission Factors:</u> Natural Gas (dryer/mixer) = 0.6 pounds per million cubic feet of natural gas; No. 2 Fuel Oil (dryer/mixer/heaters) = 0.071 pounds per gallon of No. 2 fuel oil; No. 4 Fuel Oil (dryer/mixer) = 0.075 pounds per gallon of No. 4 fuel oil; Propane (dryer/mixer/heaters) = 0.00002 pounds per gallon of propane; Butane (dryer/mixer/heaters) = 0.00002 pounds per gallon of butane; Waste Oil (dryer/mixer) = 0.147 pounds per gallon of waste oil; EAF steel mill Slag = 0.0014 pounds per ton of EAF steel mill slag processed; and Blast Furnace Slag = 0.5413 pounds per ton of blast furnace slag processed, with a 30 day calendar month average sulfur content less than or equal to 1.11 percent by weight or 0.74 pounds per ton of blast furnace slag processed, with a 30 day calendar month average sulfur content greater than 1.11 percent by weight but less than or equal to 1.5 percent by weight.</p>
--	---

Nitrogen oxide (NOx) emissions shall be determined using the following equation:

$$N = \frac{[H(0.02) + G(190) + O(0.024) + F(0.047) + P(0.013) + B(0.015) + U(0.019)]}{2000}$$

<p><u>Where:</u> N = tons of nitrogen oxide emissions for previous 12 consecutive month period; H = gallons of No. 2 fuel oil used in heaters in previous 12 months; G = million cubic feet of natural gas used in dryer/mixer in previous 12 months; O = gallons of No. 2 fuel oil used in dryer/mixer in previous 12 months; F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months; P = gallons of propane used in dryer/mixer and heaters in previous 12 months; B = gallons of butane used in dryer/mixer and heaters in previous 12 months; and U = gallons of waste oil used in dryer/mixer in previous 12 months.</p>	<p><u>Emission Factors</u> No. 2 Fuel Oil (heaters) = 0.02 pounds per gallon of No. 2 fuel oil; Natural Gas (dryer/mixer) = 190 pounds per million cubic feet of natural gas; No. 2 Fuel Oil (dryer/mixer) = 0.024 pounds per gallon of No. 2 fuel oil; No. 4 Fuel Oil (dryer/mixer) = 0.047 pounds per gallon of No. 4 fuel oil; Propane (dryer/mixer/heaters) = 0.013 pounds per gallon of propane; Butane (dryer/mixer/heaters) = 0.015 pounds per gallon of butane; and Waste Oil (dryer/mixer) = 0.019 pounds per gallon of waste oil.</p>
--	--

FESOP Fuel Usage, Slag Usage, and SO₂ and NO_x Emissions Quarterly Reporting Form Page 2 of 3

Quarter: _____ Year: _____

Month	Fuel Types (units)	Column 1	Column 2	Column 1 + Column 2	Total SO ₂ Emissions From All Fuels and Slag Used (tons per 12 month consecutive period)	Total NO _x Emissions From All Fuels Used (tons per 12 month consecutive period)
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total		
	Natural gas (mmcf)					
	No. 2 fuel oil (heaters) (gallons)					
	No. 2 fuel oil (gallons)					
	No. 4 fuel oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste oil (gallons)					
	EAF steel mill Slag (tons)					
	Blast Furnace Slag with a sulfur content ≤ 1.11 (tons)					
	Blast Furnace Slag with a sulfur content > 1.11 but ≤ 1.5 (tons)					
	Natural gas (mmcf)					
	No. 2 fuel oil (heaters) (gallons)					
	No. 2 fuel oil (gallons)					
	No. 4 fuel oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste oil (gallons)					
	EAF steel mill Slag (tons)					
	Blast Furnace Slag with a sulfur content ≤ 1.11 (tons)					
	Blast Furnace Slag with a sulfur content > 1.11 but ≤ 1.5 (tons)					
	Natural gas (mmcf)					
	No. 2 fuel oil (heaters) (gallons)					
	No. 2 fuel oil (gallons)					
	No. 4 fuel oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste oil (gallons)					
	EAF steel mill Slag (tons)					
	Blast Furnace Slag with a sulfur content ≤ 1.11 (tons)					
	Blast Furnace Slag with a sulfur content > 1.11 but ≤ 1.5 (tons)					

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.

Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

...

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

**FESOP Quarterly Report
Page 1 of 3**

Source Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F141-22022-00027
Facility: Cold-mix asphalt production
Parameter: VOC emissions
Limit: VOC emissions from the sum of the binders shall not exceed 51.28 tons per twelve (12) consecutive month period with compliance determined at the end of each month. VOC emissions shall be determined using the following equation:

$$V_{cm} = \left(\frac{S}{AF} \right) + \sum_{i=1}^n [C \times (B : 100) \times (D : 100) \times (V : 100)]$$

Where:

V_{cm} = tons of VOC emissions from cold mix asphalt production in previous 12 month consecutive period;
S = tons of VOC solvent used for each binder as defined in D.1.4(e)(1) through (5) in previous 12 months; and
AF = Adjustment factor for each type of liquid binder as defined in D.1.4(e)(1) through (5);
n = total number of binders used in the production of cold mix asphalt as defined in D.1.4(e)(6);
i = each binder used in the production of cold mix asphalt as defined in D.1.4(e)(6);
C = tons of cold mix asphalt produced using each binder as defined in D.1.4(e)(6) in previous 12 months;
B = Percent of binder used in cold mix asphalt for each binder as defined in D.1.4(e)(6);
D = Percent solvent in each binder as defined in D.1.4(e)(6); and
V = Percent of VOC from the solvent that evaporates when heated to 500°F for each binder as defined in D.1.4(e)(6). This shall be determined by using distillation data provided by the vendor or based on a distillation test performed by the source.

Adjustment Factors:

Cutback Asphalt Rapid Cure Adjustment Factor = 1.053;
Cutback Asphalt Medium Cure Adjustment Factor = 1.429;
Cutback Asphalt Slow Cure Adjustment Factor = 4.0;
Emulsified Asphalt with Liquid Binder Adjustment Factor = 2.155; and
Other Asphalt with Liquid Binder Adjustment Factor = 40.0

FESOP Cold Mix Asphalt Usage and VOC Emissions Quarterly Reporting Form Page 2 of 3

Quarter: _____ Year: _____

Month	Type of Liquid Binder	Solvent Usage This Month (tons)	Adjustment Factor	VOC Emissions From Each Binder This Month (tons)	VOC Emissions From Cold Mix This Month (tons)	VOC Emissions From Cold Mix Previous 11 Months (tons)	VOC Emissions From Cold Mix 12 Month Total (tons)
Month 1	Cut back asphalt rapid cure		1.053				
	Cut back asphalt medium cure		1.429				
	Cut back asphalt slow cure		4.0				
	Emulsified asphalt		2.155				
	Other asphalt		40.0				
Month 2	Cut back asphalt rapid cure		1.053				
	Cut back asphalt medium cure		1.429				
	Cut back asphalt slow cure		4.0				
	Emulsified asphalt		2.155				
	Other asphalt		40.0				
Month 3	Cut back asphalt rapid cure		1.053				
	Cut back asphalt medium cure		1.429				
	Cut back asphalt slow cure		4.0				
	Emulsified asphalt		2.155				
	Other asphalt		40.0				

FESOP Cold Mix Asphalt Usage and VOC Emissions Quarterly Reporting Form Page 3 of 3

Quarter: _____ Year: _____

Rieth-Riley other asphalt with solvent binder

Month	Name of Liquid Binder	Cold Mix Asphalt Produced Using Binder (tons)	Binder Usage This Month (tons)	Solvent Usage This Month (tons)	Evaporation Rate of Solvent When Heated to 500°F (%)	VOC Emissions From Each Binder This Month (tons)	VOC Emissions From Cold Mix This Month (tons)	VOC Emissions From Cold Mix Previous 11 Months (tons)	VOC Emissions From Cold Mix 12 Month Total (tons)
Month 1									
Month 2									
Month 3									

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

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

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

Quarterly Report

Source Name: _____ Rieth-Riley Construction Co., Inc.
 Source Address: _____ 25200 State Road 23, South Bend, Indiana 46614
 FESOP No.: _____ F141-22022-00027
 Facility: _____ Dryer/mixer burner
 Parameter: _____ CO₂e emissions
 Limit: _____ The combined CO₂e emissions from shall not exceed 95,328.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(i).

QUARTER: _____ YEAR: _____

Month	Fuel Types (units)	Column 1	Column 2	Column 1 + Column 2	Total CO ₂ e Emissions From All Fuels Used (tons per 12 month consecutive period)
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	
	Natural gas (MMcf)				
	No. 2 fuel oil (gallons)				
	No. 4 fuel oil (gallons)				
	propane (gallons)				
	butane (gallons)				
	used/waste oil gallons)				
	Natural gas (MMcf)				
	No. 2 fuel oil (gallons)				
	No. 4 fuel oil (gallons)				
	propane (gallons)				
	butane (gallons)				
	used/waste oil gallons)				
	Natural gas (MMcf)				
	No. 2 fuel oil (gallons)				
	No. 4 fuel oil (gallons)				
	propane (gallons)				
	butane (gallons)				
	used/waste oil gallons)				

No deviation occurred in this quarter.
 Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

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

~~FESOP Quarterly Report~~

Source Name: ~~_____ Rieth-Riley Construction Co., Inc. _____~~
 Source Address: ~~_____ 25200 SR 23, South Bend, Indiana 46614 _____~~
 FESOP Permit No.: ~~_____ F141-36333-00027 _____~~
 Facility: ~~_____ Dryer/Mixer DRUM _____~~
 Parameter: ~~_____ HCl emissions _____~~
 Limit: ~~_____ HCl emissions from the dryer/burner shall not exceed 9.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Hydrogen Chloride (HCl) emissions shall be determined using the following equation: _____~~

$$\frac{HCl}{2000} = \frac{U}{1000} (66.0)$$

<p><u>Where:</u> HCl = _____ tons of hydrogen chloride emissions for previous 12 consecutive month period; and U = _____ equivalent waste oil usage (gallons) as determined by the equation in D.1.12(g)</p>	<p><u>Emission Factor:</u> 66.0 = _____ Numeric multiplier from AP-42, Chapter 4.11, Table 1.11-3, for determining HCl emissions.</p>
--	--

QUARTER : _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Usage Emissions this Month (tons)	Usage Emissions Previous 11 Months (tons)	Usage Emissions 12-Month Total (tons)
Month 1			
Month 2			
Month 3			

...

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) aggregate rotary dryer and drum hot-mix unit (dryer/mixer), identified as DRUM, approved for construction in 2009, with a maximum capacity of four hundred fifty (450) tons of asphalt per hour, processing blast furnace slag, electric arc furnace steel mill slag, and certified asbestos-free factory second and/or post consumer waste shingles in the aggregate mix, equipped with one (1) dryer/mixer burner, having a maximum heat input capacity of one hundred fifty (150) MMBtu per hour, firing waste oil as primary fuel, using No. 2 fuel oil, No. 4 fuel oil, natural gas, propane gas, and butane gas as backup fuels, equipped with a ninety thousand (90,000) actual cubic feet per minute (acfm) baghouse for particulate control and exhausting through Stack SV1. No shingles are ground at this source.

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

- (b) One (1) hot oil heater, identified as 14A, constructed in 1988, with a maximum heat input capacity of 2.0 MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV2.
- (c) One (1) hot oil heater, identified as 14B, approved for construction in 2009, with a maximum heat input capacity of two (2.0) MMBtu per hour, firing No. 2 fuel oil as primary fuel, using natural gas, butane gas and propane gas as backup fuels, and exhausting through Stack SV10.

Insignificant Activities:

- (a) Two (2) A.C. tank heaters, firing No. 2 fuel oil as primary fuel, firing natural gas, propane gas and butane gas as backup fuels, with a maximum heat input capacity of 0.48 million British thermal units per hour, each.

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

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

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

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

- (a) The asphalt production rate shall be limited to less than 1,000,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) PM emissions from the dryer/mixer shall be limited to less than 0.382 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, will limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

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

Pursuant to 326 IAC 2-8-4, the emissions of PM₁₀, PM_{2.5}, VOC, and CO from the dryer/mixer shall be limited as follows:

- (a) The asphalt production rate shall be limited to less than 1,000,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) PM₁₀ emissions from the dryer/mixer shall be limited to less than 0.161 pounds of PM₁₀ per ton of asphalt produced.
- (c) PM_{2.5} emissions from the dryer/mixer shall be limited to less than 0.180 pounds of PM_{2.5} per ton of asphalt produced.
- (d) VOC emissions from the dryer/mixer shall be limited to less than 0.032 pounds of VOC per ton of asphalt produced.
- (e) CO emissions from the dryer/mixer shall be limited to less than 0.130 pounds of CO per ton of asphalt produced.

Compliance with these limits, combined with the potential to emit PM₁₀, PM_{2.5}, CO, and VOC from all other emission units at this source, will render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Compliance with the throughput limit and lb/ton VOC emission limit shall limit the VOC emissions from the dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable.

D.1.3 Particulate Matter (PM) [326 IAC 6.5-1-2]

Pursuant to 326 IAC 6.5-1-2 (Particulate Matter Limitations Except Lake County), particulate matter (PM) emissions from the dryer/mixer, hot oil heaters, and A. C. tank heaters shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)).

D.1.4 FESOP Limits: SO₂, NO_x, and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

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

- (a) **Fuel and Slag Specifications**
 - (1) The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight.
 - (2) The sulfur content of the No. 4 fuel oil shall not exceed 0.5% by weight.
 - (3) The sulfur content of the waste oil shall not exceed 1.00% by weight
 - (4) The waste oil combusted shall not contain more than 0.50% ash, 0.40% chlorine, and 0.01% lead.
 - (5) The HCl emissions shall not exceed 26.4 pounds of HCl per 1,000 gallons of waste oil burned.

- (6) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.
- (7) The SO₂ emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of blast furnace slag processed in the aggregate mix.
- (8) The sulfur content of the steel slag shall not exceed 0.66% by weight.
- (9) The SO₂ emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag processed in the aggregate mix.

(b) Single Fuel and Slag Usage Limitations:

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

- (1) Natural gas usage shall not exceed 1,007 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) No. 2 fuel oil usage shall not exceed 1,436,125 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (3) No. 4 fuel oil usage shall not exceed 1,359,531 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (4) Propane usage shall not exceed 14,519,337 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (5) Butane usage shall not exceed 12,753,906 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (6) Waste oil usage shall not exceed 693,638 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (7) The Blast Furnace slag usage shall not exceed 1,655,640 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) Multiple Fuel and Slag Usage Limitation:

When combusting any single fuel or more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, hot oil heaters, and A.C. tank heaters, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer shall be limited as follows:

- (1) SO₂ emissions from the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and slag usage shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (2) **NO_x emissions from the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and slag usage shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.**

- (d) **HCl Limitation:**
HCl emissions from the dryer/mixer burner shall not exceed 9.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (e) **Asphalt Shingle Usage Limitation**
Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use the following as an additive in its aggregate mix:
 - (1) **Certified asbestos-free factory second asphalt shingles;**
 - (2) **Post consumer waste shingles generated at single family homes and/or residential buildings containing four or fewer dwelling units; and/or**
 - (3) **Factory second shingles and/or post consumer waste shingles that have sampled negative for asbestos.**

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

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

- (a) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations), the SO₂ emissions from the dryer/mixer burner at the asphalt plant shall not exceed five-tenths (0.5) pound per million Btu heat input while combusting distillate oil (including No. 2 fuel oil).
- (b) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the dryer/mixer burner shall be limited to 1.6 pounds per million Btu heat input when using residual oil (including waste oil).
- (c) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.1.7 Particulate Control

- (a) In order to comply with Conditions D.1.1(b), D.1.2(b), D.1.2(c), and D.1.3, the baghouse controlling emissions from the dryer/mixer shall be in operation at all times that the dryer/mixer at this asphalt plant 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.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

- (a) In order to demonstrate compliance with Conditions D.1.1(b), D.1.2(b), D.1.2(c), and D.1.3, the Permittee shall perform PM, PM₁₀, and PM_{2.5} testing of the dryer/mixer not later than five (5) years from the date of the most recent valid compliance demonstration. This testing shall be conducted utilizing methods approved by the Commissioner and shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.
- (b) In order to demonstrate compliance with Condition D.1.4(a)(7), when using blast furnace slag, the Permittee shall perform SO₂ testing for one (1) aggregate dryer not later than one hundred eighty (180) days of initial use of blast furnace slag in the aggregate mix with the drum mixers, utilizing methods as approved by the Commissioner. Testing shall only be performed if the company has not previously performed SO₂ testing while using blast furnace slag in the aggregate mix at one of their other Indiana facilities.

D.1.9 Sulfur Dioxide (SO₂) Emissions and Sulfur Content

Fuel Oil

Compliance with Conditions D.1.4(a)(1 through 2), shall be determined utilizing one of the following options.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions and sulfur content do not exceed the limitations contained in Conditions D.1.4(a)(1 and 2) and D.1.5 by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.

- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 150 MMBtu per hour burner for the dryer/mixer, 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.

Blast Furnace Slag

- (b) Pursuant to 326 IAC 2-8-4 (FESOP), compliance with the blast furnace slag limitations established in Condition D.1.4(a)(6) shall be determined utilizing one of the following options. Compliance shall be demonstrated on a thirty (30) day calendar-month average.

- (1) Maintaining all records of vendor analyses or certifications of Blast Furnace slag delivered; or
- (2) Analyzing a sample of each blast furnace slag delivery, if no vendor analyses or certifications are available, to determine the sulfur content of the Blast Furnace slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.
- (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

Steel Slag

- (c) Pursuant to 326 IAC 2-8-4 (FESOP), compliance with the steel slag limitations established in Condition D.1.4(a)(8) shall be determined utilizing one of the following options. Compliance shall be demonstrated on a thirty (30) day calendar-month average.

- (1) Maintaining all records of vendor analyses or certifications of steel slag delivered; or
- (2) Analyzing a sample of each steel slag delivery, if no vendor analyses or certifications are available, at least once per quarter, to determine the sulfur content of the steel slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.
- (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

D.1.10 Multiple Fuel and Slag Usage Limitations

- (a) In order to comply with the Condition D.1.4(c)(1) when combusting any single fuel or more than one fuel per twelve (12) consecutive month period in the dryer/mixer

burner, hot oil heaters, and A.C. tank heaters, in conjunction with the use of slag in the aggregate mix, the Permittee shall limit fuel usage according to the following formulas:

Sulfur Dioxide Emission Calculation

$$SO_2 = \frac{G(E_G) + O(E_O) + F(E_F) + P(E_P) + B(E_B) + W(E_W) + BL(E_{BL}) + SL(E_{SL})}{2,000 \text{ lbs/ton}}$$

where:

- SO₂ = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in last 12 months
- F = gallons of No. 4 fuel oil used in last 12 months
- P = gallons of Propane used in last 12 months
- B = gallons of Butane used in last 12 months
- W = gallons of Waste oil used for last 12 months
- BL = tons of blast furnace slag used in the dryer/mixer in the last 12 months
- SL = tons of steel slag used in the dryer/mixer in the last 12 months
- E_G = 0.60 lb/million cubic feet of natural gas
- E_O = 71.00 pounds/1000 gallons of No. 2 fuel oil
- E_F = 75.00 pounds/1000 gallons of No. 4 fuel oil
- E_P = 0.02 pounds/1000 gallons of Propane
- E_B = 0.02 pounds/1000 gallons of Butane
- E_W = 147.0 pounds/1000 gallons of waste oil
- E_{BL} = 0.74 lb/ton of blast furnace slag used
- E_{SL} = 0.0014 lb/ton of steel slag used

- (b) In order to comply with Condition D.1.4(c)(2) when combusting any single fuel or more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, hot oil heaters, and A.C. tank heaters, in conjunction with the use of slag in the aggregate mix, the Permittee shall determine NOx emissions from the dryer/mixer burner according to the following formula:

Nitrogen Oxides (NOx) Emission Calculation

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

where:

- NOx = tons of NOx emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in last 12 months
- F = gallons of No. 4 fuel oil used in last 12 months
- P = gallons of Propane used in last 12 months
- B = gallons of Butane used in last 12 months
- W = gallons of Waste oil used for last 12 months
- E_G = 190 lb/million cubic feet of natural gas
- E_O = 24.00 pounds/1000 gallons of No. 2 fuel oil
- E_F = 47.00 pounds/1000 gallons of No. 4 fuel oil
- E_P = 13.00 pounds/1000 gallons of Propane
- E_B = 15.00 pounds/1000 gallons of Butane
- E_W = 19.00 pounds/1000 gallons of waste oil

D.1.11 Waste Oil Usage / HAP (HCl) Emissions [326 IAC 2-8-4]

In order to determine compliance with Condition D.1.4(d), when using waste oil, HCl emissions shall be determined in accordance with the following:

- (a) Waste oil usage with respect to the actual chlorine content shall be determined using the following equation:

$$U = \sum_{k=1}^n (W_A * Cl_A)$$

Where:

- U = equivalent waste oil usage (gallons) in previous 12 consecutive months;
n = total number of waste oil deliveries;
k = each specific waste oil delivery;
W_A = actual gallons of waste oil used from each specific waste oil delivery; and
Cl_A = actual percent by weight chlorine content of waste oil for each specific waste oil delivery.

- (b) Hydrogen chloride (HCl) emissions shall be determined using the following equation:

$$HCl = \frac{U}{1000} \frac{(66.0)}{2000}$$

Where:

- HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and
U = equivalent waste oil usage (gallons) as determined by the equation in D.1.11(a).
66.0 = Numeric multiplier from AP-42, Chapter 1.11, Table 1.11-3, for determining HCl emissions.

D.1.12 Shingle Asbestos Content

Compliance with Condition D.1.4(d) shall be determined utilizing one of the following options:

- (a) Providing a shingle supplier certification that the factory second shingles do not contain asbestos;
- (b) Obtaining from the post consumer waste shingle supplier a signed certification that the post consumer waste shingles were generated at single family homes and/or residential buildings containing four or fewer dwelling units; and/or
- (c) Analyzing a sample of the factory second shingles and/or post consumer waste shingles delivery to determine the asbestos content of the shingles, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

D.1.13 Chlorine Content

The Permittee shall demonstrate compliance with the waste oil chlorine content limit established in Condition D.1.4(a)(4), by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

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

D.1.14 Visible Emissions Notations

- (a) **Visible emission notations of the dryer/mixer stack (SV1) exhaust shall be performed at least once per day during normal daylight operations when exhausting to the atmosphere. 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 is are observed, the Permittee shall take reasonable response steps. Section C- Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.**

D.1.15 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 emission unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).**

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

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

D.1.16 Record Keeping Requirement

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

- (b) To document the compliance status with Conditions D.1.4, D.1.5, D.1.9, D.1.10, D.1.12, and D.1.13 the Permittee shall maintain records in accordance with (1) through (11) below. Records maintained for (1) through (10) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.4, D.1.5, D.1.9, D.1.10, D.1.12, and D.1.13.**
 - (1) Calendar dates covered in the compliance determination period;**
 - (2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide and nitrogen oxide emission rates for each fuel used at the source since the last compliance determination period;**
 - (3) Actual waste oil usage, ash, chlorine, and lead content, and equivalent hydrogen chloride emission rate for waste oil used at the source since the last compliance determination period;**
 - (4) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and**
 - (5) If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:**
 - (i) Fuel supplier certifications;**
 - (ii) The name of the fuel supplier; and**
 - (iii) A statement from the fuel supplier that certifies the sulfur content of the No. 2, No. 4, and waste oil, and the chlorine content of waste oil.**
 - (6) Actual blast furnace and steel slag usage, sulfur content and equivalent sulfur dioxide emission rates for all blast furnace and steel slag used at the source since the last compliance determination period;**
 - (7) A certification, signed by the owner or operator, that the records of the blast furnace and steel slag supplier certifications represent all of the blast furnace and steel slag used during the period; and**
 - (8) If the slag supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:**
 - (i) Blast furnace and steel slag supplier certifications;**
 - (ii) The name of the blast furnace and steel slag supplier; and**
 - (iii) A statement from the blast furnace and steel slag supplier that certifies the sulfur content of the blast furnace and steel slag.**
 - (9) If the factory second shingle supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:**

- (A) **Factory second shingle supplier certifications;**
 - (B) **The name of the factory second shingle supplier(s); and**
 - (C) **A statement from the factory second shingle supplier(s) that certifies the shingles from their company do not contain asbestos.**
- (10) **If the post consumer waste shingle supplier certification is used to demonstrate compliance, the following as a minimum, shall be maintained:**
- (A) **Post consumer waste shingle supplier certifications;**
 - (B) **The name of the post consumer waste shingle supplier(s); and**
 - (C) **A statement from the post consumer shingle supplier(s) that certifies the shingles were generated at single family homes and/or residential buildings containing four or fewer dwelling units.**
- (11) **If the factory second shingles and/or post consumer waste shingles are analyzed to determine the asbestos content, the following, as a minimum, shall be maintained:**
- (A) **The name of the shingle supplier(s);**
 - (B) **The name of the certified lab or certified personnel that performed the shingle asbestos content analysis; and**
 - (C) **The shingle asbestos content analysis results.**
- (c) **To document the compliance status with Condition D.1.13, the Permittee shall maintain records of visible emission notations of the dryer/mixer stack (SV1) exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).**
- (d) **Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.**

D.1.17 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.1.1(a), D.1.2(a), D.1.4(b) and D.1.4(c) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (i) **Cold-mix cutback asphalt production, constructed in 1988, with a maximum capacity of 372 tons of aggregate per hour.**

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

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

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

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

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

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

- (a) Pursuant to 326 IAC 2-8-4, the VOC emissions from the sum of the binders shall not exceed 54.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) The VOC emissions from any liquid binder used in asphalt production shall not exceed 54.62 tons per year. The liquid binder used in asphalt production shall be limited as follows:
 - (1) Cutback asphalt rapid cure liquid binder usage shall not exceed 57.49 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 95% volatilization)
 - (2) Cutback asphalt medium cure liquid binder usage shall not exceed 78.03 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 70% volatilization)
 - (3) Cutback asphalt slow cure liquid binder usage shall not exceed 218.48 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 25% volatilization)
 - (4) Emulsified asphalt with solvent liquid binder usage shall not exceed 117.72 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 46.4% volatilization)
 - (5) Emulsified asphalt with fuel oil liquid binder usage shall not exceed 2,184.80 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. The fuel oil diluent shall be limited to 25.9% of the total weight of the emulsified asphalt mix. (Based on 2.5% volatilization)
- (c) When using more than one liquid binder per twelve (12) consecutive month period, VOC emissions shall be limited as follows:
 - (1) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) month consecutive

period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder (or for a type of binder not listed above), the Permittee shall use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment ratio listed in the table that follows. [The adjustment ratio is equal to 1/(percent of initial VOC in solvent that volatilizes or is emitted from the final product)]

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

Type of binder	Adjustment ratio
Cutback Asphalt Rapid Cure (95% volatilization)	1.053
Cutback Asphalt Medium Cure (70% volatilization)	1.429
Cutback Asphalt Slow Cure (25% volatilization)	4.000
Emulsified Asphalt (46.4% volatilization)	2.155
Emulsified Asphalt (2.5% volatilization)	40.00

The equivalent total tons of VOC emitted from the combined liquid binders shall be less than 54.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit VOCs and HAPs from all other emission units at this source, will limit source-wide VOC emissions to less than 100 tons per twelve (12) consecutive month period, any single HAP 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 the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants) not applicable.

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

D.2.3 Record Keeping Requirements

- (a) To document the compliance status with Condition D.2.2(b)(1) through (5), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.2(b)(1) through (5).
- (1) Calendar dates covered in the compliance determination period;
 - (2) Cutback asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;
 - (3) VOC solvent content by weight of the cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and
 - (4) Amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.

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

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

D.2.4 Reporting Requirements

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

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

FESOP Quarterly Report

Source Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F141-22022-00027
Facility: Dryer/Mixer
Parameter: Hot mix asphalt production
Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ **YEAR:** _____

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

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

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

...

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

FESOP Quarterly Report

Source Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F141-36333-00027
Facility: Dryer/Mixer
Parameter: Fuel & Slag Usage / SO₂ emissions / NO_x emissions
Emission Limits: Sulfur dioxide (SO₂) emissions shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.10(a).

Nitrogen Oxides (NO_x) emissions shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.10(b).

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

Fuel Type (Units)	Fuel Usage Limit (per 12 consecutive month period)
Dryer/Mixer Burner	
Natural Gas (million cubic feet)	1,007
No. 2 Distillate Fuel Oil (gallons)	1,436,125
No. 4 Fuel Oil (gallons)	1,359,531
Propane (gallons)	14,519,337
Butane (gallons)	12,753,906
Waste Oil (gallons)	693,638
Blast Furnace Slag (tons)	1,655,640

Facility: Cold-mix Asphalt Production
Parameter: Binder Usage / VOC Emissions
Emission Limits: VOC emissions from the sum of the binders shall not exceed 54.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Type of Binder	Binder Usage Limit (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	57.49
Cutback Asphalt Medium Cure	78.03
Cutback Asphalt Slow Cure	218.48
Emulsified Asphalt	117.72
Other Asphalt	2,184.80

FESOP Quarterly Report - Fuel & Slag Usage / SO2 emissions / NOx emissions

QUARTER: _____ YEAR: _____

Month	Fuel / Slag Usage (units)	Column 1	Column 2	Column 1 +Column 2	SO2 Emissions (tons per 12 months)	NOx Emissions (tons per 12 months)
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total		
	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste Fuel Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag (tons)					
	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste Fuel Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag (tons)					
	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Propane (gallons)					
	Butane (gallons)					
	Waste Fuel Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag (tons)					

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

FESOP Quarterly Report - Binder Usage / VOC Emissions

QUARTER: _____ YEAR: _____

Month	Solvent Usage this Month (Tons)	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)
	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				

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

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

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	4.000
Emulsified Asphalt	2.155
Other Asphalt	40.000

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

FESOP Quarterly Report

Source Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 SR 23, South Bend, Indiana 46614
FESOP Permit No.: F141-36333-00027
Facility: Dryer/Mixer DRUM
Parameter: HCl emissions
Limit: HCl emissions from the dryer/burner shall not exceed 9.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Hydrogen Chloride (HCl) emissions shall be determined using the following equation:

$$HCl = \frac{U}{1000} (66.0) \\ 2000$$

<p>Where: HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and U = equivalent waste oil usage (gallons) as determined by the equation in D.1.11(a)</p>	<p>Emission Factor: 66.0 = Numeric multiplier from AP-42, Chapter 1.11, Table 1.11-3, for determining HCl emissions.</p>
--	---

QUARTER : _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	HCl Emissions this Month (tons)	HCl Emissions Previous 11 Months (tons)	HCl Emissions 12 Month Total (tons)

...

Recommendation

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

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 28, 2015.

Conclusion

The operation of this hot-mix asphalt production plant shall be subject to the conditions of the attached FESOP Renewal No. F141-36333-00027.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Tamera Wessel 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) 234-8530 or toll free at 1-800-451-6027 extension 4-8530.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

**Appendix A.1: Unlimited Emissions Calculations
Entire Source - Drum Mix**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Asphalt Plant Maximum Capacity - Drum Mix

Maximum Hourly Asphalt Production =	450	ton/hr								
Maximum Annual Asphalt Production =	3,942,000	ton/yr								
Maximum Annual Blast Furnace Slag Usage =	1,655,640	ton/yr	1.5	% sulfur						
Maximum Annual Steel Slag Usage =	1,655,640	ton/yr	0.66	% sulfur						
Maximum Dryer Fuel Input Rate =	150.0	MMBtu/hr								
Natural Gas Usage =	1,314	MMCF/yr								
No. 2 Fuel Oil Usage =	9,385,714	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Usage =	9,385,714	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.00	% sulfur						
Propane Usage =	14,519,337	gal/yr, and	0.20	gr/100 ft3 sulfur						
Butane Usage =	13,490,760	gal/yr, and	0.22	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	9,385,714	gal/yr, and	1.00	% sulfur	0.50	% ash	0.400	% chlorine,	0.010	% lead
Diesel Fuel Usage - Generator < 600 HP =	0	gal/yr, and								
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr, and	0.50	% sulfur						
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production								
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production								
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production								
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production								
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production								
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed								
Unlimited Steel 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)	150.17	119.67	119.67	689.85	220.56	7.42	56.66	129.63	123.89 (hydrogen chloride)
Dryer/Mixer (Process)	55,188.00	12,811.50	2,956.50	114.32	108.41	63.07	256.23	21.01	6.11 (formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	612.59	0	0	0	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.31	0.51	0.51	11.02	3.35	0.25	1.87	0.050	0.039 (hexane)
Worst Case Emissions*	55,188.31	12,812.01	2,957.01	1,313.45	223.91	63.32	258.10	129.68	123.89 (hydrogen chloride)
Fugitive Emissions									
Asphalt Load-Out, Silo Filling, On-Site Yard	2.18	2.18	2.18	0	0	33.76	5.68	0.56	0.17 (formaldehyde)
Material Storage Piles	2.02	0.71	0.71	0	0	0	0	0	0
Material Processing and Handling	12.73	6.02	0.91	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	62.54	22.84	22.84	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	261.16	66.56	6.66	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	47,372.99	0	12,356.63	4,263.57 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.00	0	0.00	0.00 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	0
Total Fugitive Emissions	340.64	98.32	33.30	0.00	0.00	47,406.75	5.68	12,357.19	4,263.57 (xylenes)
Totals Unlimited/Uncontrolled PTE	55,528.95	12,910.33	2,990.31	1,313.45	223.91	47,470.07	263.78	12,486.87	4,263.57 (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 + Worst Case Emissions From Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP
 Fuel component percentages provided by the source.

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

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Maximum Capacity

Maximum Fuel Input Rate =	150	MMBtu/hr
Natural Gas Usage =	1,314	MMCF/yr
No. 2 Fuel Oil Usage =	9,385,714	gal/yr, and
No. 4 Fuel Oil Usage =	9,385,714	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and
Propane Usage =	14,519,337	gal/yr, and
Butane Usage =	13,490,760	gal/yr, and
Used/Waste Oil Usage =	9,385,714	gal/yr, and
	0.50	% sulfur
	0.50	% sulfur
	0.00	% sulfur
	0.20	gr/100 ft3 sulfur
	0.22	gr/100 ft3 sulfur
	1.00	% sulfur
	0.50	% ash
	0.400	% chlorine
	0.010	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)							Unlimited/Uncontrolled Potential to Emit (tons/yr)								
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (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	32.0	1.25	9.39	32.85	0.00	3.630	4.047	150.17	150.17	
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	25.5	4.99	15.49	38.95	0.00	3.630	4.047	119.67	119.67	
SO2	0.6	71.0	75.0	0.0	0.020	0.020	147.0	0.39	333.19	351.96	0.00	0.145	0.194	689.85	689.85	
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	124.83	112.63	220.56	0.00	94.38	101.18	89.16	220.56	
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	3.61	0.94	0.94	0.00	7.26	7.42	4.69	7.42	
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	55.188	23.46	23.46	0.00	54.45	56.66	23.46	56.66	
Hazardous Air Pollutant																
HCl							26.4								123.89	123.89
Antimony			5.25E-03	5.25E-03			negl			2.46E-02	0.00E+00				negl	2.5E-02
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	1.3E-04	2.63E-03	6.19E-03	0.00E+00				5.16E-01	5.2E-01
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	7.9E-06	1.97E-03	1.30E-04	0.00E+00				negl	2.0E-03
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	7.2E-04	1.97E-03	1.87E-03	0.00E+00				4.36E-02	4.4E-02
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	9.2E-04	1.97E-03	3.97E-03	0.00E+00				9.39E-02	9.4E-02
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	5.5E-05		2.83E-02	0.00E+00				9.86E-04	2.8E-02
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	3.3E-04	5.91E-03	7.09E-03	0.00E+00				2.6E+00	2.58
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	2.5E-04	3.94E-03	1.41E-02	0.00E+00				3.19E-01	0.32
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04			1.7E-04	1.87E-03	5.30E-04	0.00E+00					2.0E-03	
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	1.4E-03	1.97E-03	3.97E-01	0.00E+00				5.16E-02	0.397
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.6E-05	9.86E-03	3.21E-03	0.00E+00				negl	9.9E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04						1.11E-03	0.00E+00					1.1E-03
1,3-Butadiene																0.0E+00
Acetaldehyde																0.0E+00
Acrolein																0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				1.4E-03		1.00E-03	0.00E+00					1.4E-03
Bis(2-ethylhexyl)phthalate							2.2E-03								1.03E-02	1.0E-02
Dichlorobenzene	1.2E-03						8.0E-07	7.9E-04							3.75E-06	7.9E-04
Ethylbenzene			6.36E-05	6.36E-05					2.98E-04	0.00E+00						3.0E-04
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				4.9E-02	2.86E-01	1.55E-01	0.00E+00					0.286
Hexane	1.8E+00									1.18						1.183
Phenol							2.4E-03							1.13E-02		1.1E-02
Toluene	3.4E-03		6.20E-03	6.20E-03				2.2E-03		2.91E-02	0.00E+00					2.9E-02
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		5.30E-03	0.00E+00					1.83E-01
Polycyclic Organic Matter		3.30E-03							1.55E-02							1.5E-02
Xylene			1.09E-04	1.09E-04						5.12E-04	0.00E+00					5.1E-04
							Total HAPs	1.24	0.33	0.68	0.00	0	0	127.70	129.63	

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:

Abbreviations

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

HCl = Hydrogen Chloride
 PAH = Polyaromatic Hydrocarbon

Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

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

**Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer - Process Emissions**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

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

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	55188	55188	55188	55188
PM10*	6.5	6.5	6.5	12811.5	12811.5	12811.5	12811.5
PM2.5*	1.5	1.5	1.5	2956.5	2956.5	2956.5	2957
SO2**	0.0034	0.011	0.058	6.7	21.7	114.3	114.3
NOx**	0.026	0.055	0.055	51.2	108.4	108.4	108.4
VOC**	0.032	0.032	0.032	63.1	63.1	63.1	63.1
CO***	0.13	0.13	0.13	256.2	256.2	256.2	256.2
Hazardous Air Pollutant							
HCl			2.10E-04			4.14E-01	0.41
Antimony	1.80E-07	1.80E-07	1.80E-07	3.55E-04	3.55E-04	3.55E-04	3.55E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	1.10E-03	1.10E-03	1.10E-03	1.10E-03
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	8.08E-04	8.08E-04	8.08E-04	8.08E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	1.08E-02	1.08E-02	1.08E-02	1.08E-02
Cobalt	2.60E-08	2.60E-08	2.60E-08	5.12E-05	5.12E-05	5.12E-05	5.12E-05
Lead	6.20E-07	1.50E-05	1.50E-05	1.22E-03	2.96E-02	2.96E-02	2.96E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	1.52E-02	1.52E-02	1.52E-02	1.52E-02
Mercury	2.40E-07	2.60E-06	2.60E-06	4.73E-04	5.12E-03	5.12E-03	5.12E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	0.12	0.12	0.12	0.12
Selenium	3.50E-07	3.50E-07	3.50E-07	6.90E-04	6.90E-04	6.90E-04	6.90E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.08	0.08	0.08	0.08
Acetaldehyde			1.30E-03			2.56	2.56
Acrolein			2.60E-05			5.12E-02	5.12E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.77	0.77	0.77	0.77
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.47	0.47	0.47	0.47
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	6.11	6.11	6.11	6.11
Hexane	9.20E-04	9.20E-04	9.20E-04	1.81	1.81	1.81	1.81
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.09	0.09	0.09	0.09
MEK			2.00E-05			0.04	0.04
Propionaldehyde			1.30E-04			0.26	0.26
Quinone			1.60E-04			0.32	0.32
Toluene	1.50E-04	2.90E-03	2.90E-03	0.30	5.72	5.72	5.72
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.37	1.73	1.73	1.73
Xylene	2.00E-04	2.00E-04	2.00E-04	0.39	0.39	0.39	0.39
Total HAPs							21.01
Worst Single HAP							6.11 (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

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

**Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Slag Processing**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Maximum Annual Blast Furnace Slag Usage =

1,655,640

 ton/yr

1.5

 % sulfur
 Maximum Annual Steel Slag Usage =

1,655,640

 ton/yr

0.66

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.74	612.6
Steel Slag**	0.0014	1.16

Methodology

The maximum annual slag usage was provided by the source.

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

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

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

Abbreviations

SO2 = Sulfur Dioxide

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

Company Name: Rieth-Riley Construction Co., Inc.
Source Location: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Hot Oil Heating System Units

2 HOH @ 2.0 MMBtu/hr, ea.	4.00
2 AC tank heaters @ 0.48 MMBtu/hr, ea.	0.96
	<u>4.96</u>

Maximum Hot Oil Heater Fuel Input Rate =	4.96	MMBtu/hr		
Natural Gas Usage =	43.45	MMCF/yr		
No. 2 Fuel Oil Usage =	310,354	gal/yr, and	0.50	% sulfur
Propane Usage =	480,106	gal/yr, and	0.20	gr/100 ft ³ sulfur
Butane Usage =	446,094	gal/yr, and	0.22	gr/100 ft ³ sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)				Unlimited/Uncontrolled Potential to Emit (tons/yr)				Worse Case Fuel (tons/yr)
	Hot Oil Heater				Hot Oil Heater				
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	
PM	1.9	2.0	0.5	0.6	0.041	0.31	1.20E-01	1.34E-01	0.31
PM10/PM2.5	7.6	3.3	0.5	0.6	0.17	0.51	1.20E-01	1.34E-01	0.51
SO2	0.6	71.0	0.02	0.02	0.01	11.02	4.80E-03	4.42E-03	11.02
NOx	100	20.0	13.0	15.0	2.17	3.10	3.12E+00	3.35E+00	3.35
VOC	5.5	0.20	1.00	1.10	0.12	0.03	2.40E-01	2.45E-01	0.25
CO	84	5.0	7.5	8.4	1.82	0.78	1.80E+00	1.87E+00	1.87
Hazardous Air Pollutant									
Arsenic	2.0E-04	5.6E-04			4.3E-06	8.69E-05			8.7E-05
Beryllium	1.2E-05	4.2E-04			2.6E-07	6.52E-05			6.5E-05
Cadmium	1.1E-03	4.2E-04			2.4E-05	6.52E-05			6.5E-05
Chromium	1.4E-03	4.2E-04			3.0E-05	6.52E-05			6.5E-05
Cobalt	8.4E-05				1.8E-06				1.8E-06
Lead	5.0E-04	1.3E-03			1.1E-05	1.96E-04			2.0E-04
Manganese	3.8E-04	8.4E-04			8.3E-06	1.30E-04			1.3E-04
Mercury	2.6E-04	4.2E-04			5.6E-06	6.52E-05			6.5E-05
Nickel	2.1E-03	4.2E-04			4.6E-05	6.52E-05			6.5E-05
Selenium	2.4E-05	2.1E-03			5.2E-07	3.26E-04			3.3E-04
Benzene	2.1E-03				4.6E-05				4.6E-05
Dichlorobenzene	1.2E-03				2.6E-05				2.6E-05
Ethylbenzene									0.00
Formaldehyde	7.5E-02	6.10E-02			1.6E-03	9.47E-03			9.5E-03
Hexane	1.8E+00				3.9E-02				3.9E-02
Phenol									0.00
Toluene	3.4E-03				7.4E-05				7.4E-05
Total PAH Haps	negl				negl				0.00
Polycyclic Organic Matter		3.30E-03				5.12E-04			5.1E-04
Total HAPs =					0.041	0.011			0.050
Worst Single HAP =					0.039	9.5E-03			0.039
					(Hexane)	(Formaldehyde)			(Hexane)

Methodology

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)

Abbreviations

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

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

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Maximum Fuel Input Rate To Hot Oil Heater = 4.96 MMBtu/hr
 Natural Gas Usage = 43.45 MMCF/yr, and
 No. 2 Fuel Oil Usage = 310,354.29 gal/yr

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	5.65E-04	0.004	0.004
CO	8.90E-06	0.0012	0.193	0.186	0.193
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	5.65E-04	5.43E-04	5.65E-04
Acenaphthene		5.30E-07		8.22E-05	8.22E-05
Acenaphthylene		2.00E-07		3.10E-05	3.10E-05
Anthracene		1.80E-07		2.79E-05	2.79E-05
Benzo(b)fluoranthene		1.00E-07		1.55E-05	1.55E-05
Fluoranthene		4.40E-08		6.83E-06	6.83E-06
Fluorene		3.20E-08		4.97E-06	4.97E-06
Naphthalene		1.70E-05		2.64E-03	2.64E-03
Phenanthrene		4.90E-06		7.60E-04	7.60E-04
Pyrene		3.20E-08		4.97E-06	4.97E-06

Total HAPs 4.14E-03
Worst Single HAP 2.64E-03 (Naphthalene)

Methodology

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

No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)

No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

Abbreviations

CO = Carbon Monoxide VOC = Volatile Organic Compound

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

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

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

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

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

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

Hazardous Air Pollutants (HAPs)

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

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

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

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

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

Methodology

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

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

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

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

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

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

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

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

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

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

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

² Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

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

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

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

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

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

Methodology

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

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

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

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

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

**Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel**

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

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	3,942,000	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	1.03	1.15	NA	2.18
Organic PM	3.4E-04	2.5E-04	NA	0.67	0.500	NA	1.17
TOC	0.004	0.012	0.001	8.20	24.02	2.168	34.4
CO	0.001	0.001	3.5E-04	2.66	2.326	0.694	5.68

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

PM/HAPs	0.048	0.056	0	0.104
VOC/HAPs	0.121	0.305	0.032	0.459
non-VOC/HAPs	6.3E-04	6.5E-05	1.7E-04	8.6E-04
non-VOC/non-HAPs	0.59	0.34	0.16	1.09

Total VOCs	7.71	24.02	2.0	33.8
Total HAPs	0.17	0.36	0.032	0.56
	Worst Single HAP			0.175
				(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^γ((0.0251)(T+460)-20.43)
 Organic PM Ef = 0.00141(-V)e^γ((0.0251)(T+460)-20.43)
 TOC Ef = 0.0172(-V)e^γ((0.0251)(T+460)-20.43)
 CO Ef = 0.00558(-V)e^γ((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^γ((0.0251)(T+460)-20.43)
 Organic PM Ef = 0.00105(-V)e^γ((0.0251)(T+460)-20.43)
 TOC Ef = 0.0504(-V)e^γ((0.0251)(T+460)-20.43)
 CO Ef = 0.00488(-V)e^γ((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: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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%	1.7E-03	2.4E-03	NA	4.1E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.9E-04	7.0E-05	NA	2.6E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	4.7E-04	6.5E-04	NA	1.1E-03
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.3E-04	2.8E-04	NA	4.1E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	5.1E-05	0	NA	5.1E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.5E-05	0	NA	1.5E-05
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.3E-05	0	NA	1.3E-05
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.5E-05	0	NA	1.5E-05
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	5.2E-05	4.8E-05	NA	1.0E-04
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	6.9E-04	1.1E-03	NA	1.7E-03
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	2.5E-06	0	NA	2.5E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	3.4E-04		NA	3.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	5.2E-03	5.1E-03	NA	1.0E-02
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	3.2E-06	0	NA	3.2E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.6E-02	2.6E-02	NA	0.042
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	8.4E-03	9.1E-03	NA	1.8E-02
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.5E-04	1.5E-04	NA	3.0E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	5.4E-03	9.0E-03	NA	1.4E-02
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	1.0E-03	2.2E-03	NA	3.2E-03
Total PAH HAPs							0.040	0.056	NA	0.096
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	7.9E-03	0	0	7.9E-03

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

Methodology

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

Abbreviations

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

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

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	7.71	24.02	2.04	33.76
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	5.3E-01	6.2E-02	1.4E-01	0.736
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	3.8E-03	1.3E-02	1.0E-03	0.018
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	5.8E-02	2.6E-01	1.5E-02	0.338
Total non-VOC/non-HAPS					7.30%	1.40%	0.598	0.336	0.158	1.09
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	4.3E-03	7.7E-03	1.1E-03	1.3E-02
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	7.9E-04	1.2E-03	2.1E-04	2.2E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	4.0E-03	9.4E-03	1.1E-03	1.4E-02
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	1.1E-03	3.8E-03	2.8E-04	5.2E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	1.7E-05	9.6E-04	4.6E-06	9.8E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.2E-03	5.5E-03	3.3E-04	7.1E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	9.0E-03	0	2.4E-03	1.1E-02
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	2.3E-02	9.1E-03	6.1E-03	0.038
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	7.2E-03	1.7E-01	1.9E-03	0.175
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.2E-02	2.4E-02	3.3E-03	0.040
Isocotane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.5E-04	7.4E-05	3.9E-05	2.6E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	6.5E-05	0	6.5E-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%	6.0E-04	1.3E-03	1.6E-04	2.1E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	6.3E-04	0	1.7E-04	8.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	1.7E-02	1.5E-02	4.6E-03	0.037
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	1.1E-04	0	2.8E-05	1.3E-04
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	3.4E-02	4.8E-02	8.9E-03	0.091
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	6.6E-03	1.4E-02	1.7E-03	2.2E-02
Total volatile organic HAPs					1.50%	1.30%	0.123	0.312	0.033	0.468

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: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.58	0.319	0.111
Limestone	1.6	1.85	1.00	0.338	0.118
RAP	0.5	0.58	2.40	0.253	0.089
Gravel	1.6	1.85	0.78	0.264	0.092
Shingles	0.5	0.58	0.40	0.042	0.015
Slag	3.8	4.40	1.00	0.803	0.281
Totals				2.02	0.71

Methodology

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**Maximum anticipated pile size (acres) provided by the source.

PM2.5 = PM10

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

RAP = Recycled Asphalt Pavement

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

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

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

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

where: E_f = Emission factor (lb/ton)

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

Maximum Annual Asphalt Production = 3,942,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 3,744,900 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	4.24	2.01	0.30
Front-end loader dumping of materials into feeder bins	4.24	2.01	0.30
Conveyor dropping material into dryer/mixer or batch tower	4.24	2.01	0.30
Total (tons/yr)	12.73	6.02	0.91

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	10.11	4.49
Screening	0.025	0.0087	46.81	16.29
Conveying	0.003	0.0011	5.62	2.06
Unlimited Potential to Emit (tons/yr) =			62.54	22.84

Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2
 *Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
 **Assumes PM10 = PM2.5

Abbreviations

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

**Appendix A.1: Unlimited Emissions Calculations
Unpaved Roads**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Unpaved Roads at Industrial Site

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

Maximum Annual Asphalt Production = 3,942,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 3,744,900 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 197,100 tons/yr
 Maximum No. 2 Fuel Oil Usage = 9,385,714 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	1.7E+05	6.6E+06	560	0.106	17721.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.7E+05	2.8E+06	560	0.106	17721.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	5.5E+03	2.6E+05	560	0.106	580.4
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	5.5E+03	6.6E+04	560	0.106	580.4
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	9.9E+02	4.4E+04	560	0.106	105.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	9.9E+02	1.2E+04	560	0.106	105.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	8.9E+05	1.7E+07	560	0.106	94514.1
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	8.9E+05	1.3E+07	560	0.106	94514.1
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.6E+05	6.7E+06	560	0.106	17410.5
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.6E+05	2.8E+06	560	0.106	17410.5
Total					2.5E+06	5.0E+07	560	0.106	2.6E+05

Average Vehicle Weight Per Trip = 20.3 tons/trip
 Average Miles Per Trip = 0.106 miles/trip

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

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

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

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

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	54.01	13.76	1.38	35.51	9.05	0.91	17.76	4.53	0.45
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	54.01	13.76	1.38	35.51	9.05	0.91	17.76	4.53	0.45
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	1.769	0.451	0.05	1.163	0.296	0.03	0.581	0.148	0.01
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	1.769	0.451	0.05	1.163	0.296	0.03	0.581	0.148	0.01
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.320	0.082	0.01	0.211	0.054	0.01	0.105	0.027	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.320	0.082	0.01	0.211	0.054	0.01	0.105	0.027	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	288.03	73.41	7.34	189.39	48.27	4.83	94.69	24.13	2.41
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	288.03	73.41	7.34	189.39	48.27	4.83	94.69	24.13	2.41
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	53.06	13.52	1.35	34.89	8.89	0.89	17.44	4.45	0.44
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	53.06	13.52	1.35	34.89	8.89	0.89	17.44	4.45	0.44
Totals		794.37	202.45	20.25	522.32	133.12	13.31	261.16	66.56	6.66

Methodology

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

Abbreviations

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

**Appendix A: Unlimited Emissions Calculations
Paved Roads**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Paved Roads at Industrial Site

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

Maximum Annual Asphalt Production = 3,942,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 3,744,900 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 197,100 tons/yr
 Maximum No. 2 Fuel Oil Usage = 9,385,714 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	1.7E+05	6.6E+06	300	0.057	9499.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.7E+05	2.8E+06	300	0.057	9499.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	5.5E+03	2.6E+05	300	0.057	311.1
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	5.5E+03	6.6E+04	300	0.057	311.1
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	9.9E+02	4.4E+04	300	0.057	56.3
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	9.9E+02	1.2E+04	300	0.057	56.3
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	8.9E+05	1.7E+07	300	0.057	50661.5
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	8.9E+05	1.3E+07	300	0.057	50661.5
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.6E+05	6.7E+06	300	0.057	9332.4
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.6E+05	2.8E+06	300	0.057	9332.4
Total					2.5E+06	5.0E+07			1.4E+05

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

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

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = 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 =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, E_{ext} =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.71	0.14	0.03	0.65	0.13	0.03	0.32	0.06	0.02
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.71	0.14	0.03	0.65	0.13	0.03	0.32	0.06	0.02
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.023	0.005	1.1E-03	0.021	0.004	1.0E-03	0.011	2.1E-03	5.2E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.023	0.005	1.1E-03	0.021	0.004	1.0E-03	0.011	2.1E-03	5.2E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	4.2E-03	8.4E-04	2.1E-04	3.8E-03	7.7E-04	1.9E-04	1.9E-03	3.8E-04	9.4E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	4.2E-03	8.4E-04	2.1E-04	3.8E-03	7.7E-04	1.9E-04	1.9E-03	3.8E-04	9.4E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	3.77	0.75	0.18	3.44	0.69	0.17	1.72	0.34	0.08
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	3.77	0.75	0.18	3.44	0.69	0.17	1.72	0.34	0.08
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.69	0.14	0.03	0.63	0.13	0.03	0.32	0.06	0.02
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.69	0.14	0.03	0.63	0.13	0.03	0.32	0.06	0.02
Totals		10.39	2.08	0.51	9.50	1.90	0.47	4.75	0.95	0.23

Methodology

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

Abbreviations

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

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

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Maximum Annual Asphalt Production =	3,942,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Asphalt Cement/Binder Throughput =	197,100	tons/yr

Volatiles 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%	49,866.3	47,373.0
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	56,370.6	39,459.4
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	39,420.0	9,855.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	29,565.0	13,718.2
Other asphalt with solvent binder	25.9%	2.5%	51,048.9	1,276.2
Worst Case PTE of VOC =				47,373.0

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
PTE of Total HAPs (tons/yr) =	12,356.63
PTE of Single HAP (tons/yr) =	4,263.57 Xylenes

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

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

Methodology

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

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

Abbreviations

VOC = Volatile Organic Compounds
 PTE = Potential to Emit

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

**Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 State Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel**

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

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

Volatile Organic Compounds

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

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00
Limited PTE of Single HAP (tons/yr) =	0.00 Xylenes

Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

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

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Entire Source - Drum Mix

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Asphalt Plant Limitations - Drum Mix

Maximum Hourly Asphalt Production =	450	ton/hr								
Annual Asphalt Production Limitation =	1,000,000	ton/yr								
Unlimited Blast Furnace Slag Usage =	1,655,640	ton/yr	1.50	% sulfur						
Unlimited Steel Slag Usage =	1,655,640		0.66	% sulfur						
Maximum Dryer Fuel Input Rate =	150	MMBtu/hr								
Natural Gas Limitation =	1,007	MMCF/yr								
No. 2 Fuel Oil Limitation =	1,436,125	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	1,359,531	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur						
Propane Limitation =	14,519,337	gal/yr, and	0.20	gr/100 ft3 sulfur						
Butane Limitation =	12,753,906	gal/yr, and	0.22	gr/100 ft3 sulfur						
Used/Waste Oil Limitation =	693,638	gal/yr, and	1.00	% sulfur	0.50	% ash	0.400	% chlorine,	0.010	% lead
Diesel Fuel Limitation - Generator < 600 HP =	0	gal/yr, and								
Diesel Fuel Limitation - Generator > 600 HP =	0	gal/yr	0.50	% sulfur						
PM Dryer/Mixer Limitation =	0.382	lb/ton of asphalt production								
PM10 Dryer/Mixer Limitation =	0.161	lb/ton of asphalt production								
PM2.5 Dryer/Mixer Limitation =	0.180	lb/ton of asphalt production								
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production								
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production								
Blast Furnace Slag SO2 Dryer/Mixer Limitation =	0.740	lb/ton of slag processed								
Steel Slag SO2 Dryer/Mixer Limitation =	0.0014	lb/ton of slag processed								
Cold Mix Asphalt VOC Limitation =	54.6	tons/yr								
HCl Limitation =	26.4	lb/kgal								

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)								
	Criteria Pollutants							Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
Ducted Emissions									
Dryer Fuel Combustion (worst case)	11.10	8.84	8.84			7.26	54.45	10.46	9.90 (hydrogen chloride)
Dryer/Mixer (Process)	191.16	80.73	90.17			16.00	65.00	5.33	1.55 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	99.00	99.00	0	0	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.31	0.51	0.51			0.25	1.87	0.05	0.039 (hexane)
Diesel-Fired Generator < 600 HP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000 (formaldehyde)
Diesel-Fired Generator > 600 HP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000 (benzene)
Worst Case Emissions*	191.47	81.24	90.68	99.00	99.00	16.25	66.87	10.51	9.90 (hydrogen chloride)
Fugitive Emissions									
Asphalt Load-Out, Silo Filling, On-Site Yard	0.55	0.55	0.55	0	0	8.57	1.44	0.14	0.04 (formaldehyde)
Material Storage Piles	2.38	0.83	0.83	0	0	0	0	0	0
Material Processing and Handling	3.23	1.53	0.23	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	15.87	5.80	5.80	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	35.50	9.05	0.90	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	54.62	0	14.25	4.92 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.00	0	0.00	0.00 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	negl
Total Fugitive Emissions	57.53	17.76	8.32	0	0	63.18	1.44	14.39	4.92 (xylenes)
Totals Limited/Controlled Emissions	249.00	99.00	99.00	99.00	99.00	79.43	68.31	24.90	9.90 (hydrogen chloride)

negl = negligible

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

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

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

Company Name: **Rieth-Riley Construction Co., Inc.**
 Source Address: **25200 Stat Road 23, South Bend, IN 46614**
 Permit Number: **F141-36333-00027**
 Reviewer: **Tamera Wessel**

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

Fuel Limitations

Maximum Fuel Input Rate =	150	MMBtu/hr			
Natural Gas Limitation =	1,007	MMCF/yr			
No. 2 Fuel Oil Limitation =	1,436,125	gal/yr, and	0.50	% sulfur	
No. 4 Fuel Oil Limitation =	1,359,531	gal/yr, and	0.50	% sulfur	
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0.00	% sulfur	
Propane Limitation =	14,519,337	gal/yr, and	0.20	gr/100 ft3 sulfur	
Butane Limitation =	12,753,906	gal/yr, and	0.22	gr/100 ft3 sulfur	
Used/Waste Oil Limitation =	693,638	gal/yr, and	1.00	% sulfur	0.50 % ash, 0.400 % chlorine, 0.010 % 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)	Worst Case Fuel (tons/yr)
PM	1.9	2	7	3.22	0.5	0.6	32	0.96	1.44	4.76	0.00	3.630	3.826	11.10	11.10
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	25.5	3.83	2.37	5.64	0.00	3.630	3.826	8.84	8.84
SO2	0.6	71.0	75.0	0.0	0.020	0.020	147.0	0.30	50.98	50.98	0.00	0.145	0.126	50.98	50.98
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	95.67	17.23	31.95	0.00	94.38	95.65	6.59	95.67
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.77	0.14	0.14	0.00	7.26	7.01	0.35	7.26
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	42.29	3.59	3.40	0.00	54.45	53.57	1.73	54.45
Hazardous Air Pollutant															
HCl							26.4							9.16	9.16
Antimony			5.25E-03	5.25E-03			negl			3.57E-03	0.00E+00			negl	3.6E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	1.0E-04	4.02E-04	8.97E-04	0.00E+00			3.82E-02	3.8E-02
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	6.0E-06	3.02E-04	1.89E-05	0.00E+00			negl	3.0E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	5.5E-04	3.02E-04	2.71E-04	0.00E+00			3.23E-03	3.2E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	7.0E-04	3.02E-04	5.74E-04	0.00E+00			6.94E-03	6.9E-03
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	4.2E-05		4.09E-03	0.00E+00			7.28E-05	4.1E-03
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	2.5E-04	9.05E-04	1.03E-03	0.00E+00			1.9E-01	0.19
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.9E-04	6.03E-04	2.04E-03	0.00E+00			2.36E-02	0.02
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				1.3E-04	3.02E-04	7.68E-05	0.00E+00				3.0E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	1.1E-03	3.02E-04	5.74E-02	0.00E+00			3.82E-03	0.057
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.2E-05	1.51E-03	4.64E-04	0.00E+00			negl	1.5E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04						1.60E-04	0.00E+00				1.6E-04
1,3-Butadiene															0.0E+00
Acetaldehyde															0.0E+00
Acrolein															0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				1.1E-03		1.45E-04	0.00E+00				1.1E-03
Bis(2-ethylhexyl)phthalate							2.2E-03							7.63E-04	7.6E-04
Dichlorobenzene	1.2E-03						8.0E-07	6.0E-04						2.77E-07	6.0E-04
Ethylbenzene			6.36E-05	6.36E-05						4.32E-05	0.00E+00				4.3E-05
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				3.8E-02	4.38E-02	2.24E-02	0.00E+00				0.04
Hexane	1.8E+00							0.91							0.906
Phenol							2.4E-03							8.32E-04	8.3E-04
Toluene	3.4E-03		6.20E-03	6.20E-03				1.7E-03		4.21E-03	0.00E+00				4.2E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		7.68E-04	0.00E+00			1.36E-02	1.4E-02
Polycyclic Organic Matter		3.30E-03							2.37E-03						2.4E-03
Xylene			1.09E-04	1.09E-04						7.41E-05	0.00E+00				7.4E-05
Total HAPs								0.95	0.05	0.10	0.00	0	0	9.44	10.46

Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
 Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
- Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

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

Abbreviations

- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (< 2.5 um)
- SO2 = Sulfur Dioxide
- NOx = Nitrogen 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 - Process Emissions**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Maximum Hourly Asphalt Production =	450	ton/hr
Annual Asphalt Production Limitation =	1,000,000	ton/yr
PM Dryer/Mixer Limitation =	0.382	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.161	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.180	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*	0.382	0.382	0.382	191.2	191.2	191.2	191.2
PM10*	0.161	0.161	0.161	80.7	80.7	80.7	80.7
PM2.5*	0.180	0.180	0.180	90.2	90.2	90.2	90.2
SO2**	0.003	0.011	0.058	1.7	5.5	29.0	29.0
NOx**	0.026	0.055	0.055	13.0	27.5	27.5	27.5
VOC**	0.032	0.032	0.032	16.0	16.0	16.0	16.0
CO***	0.130	0.130	0.130	65.0	65.0	65.0	65.0
Hazardous Air Pollutant							
HCl			2.10E-04			0.11	0.11
Antimony	1.80E-07	1.80E-07	1.80E-07	9.00E-05	9.00E-05	9.00E-05	9.00E-05
Arsenic	5.60E-07	5.60E-07	5.60E-07	2.80E-04	2.80E-04	2.80E-04	2.80E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	2.05E-04	2.05E-04	2.05E-04	2.05E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	2.75E-03	2.75E-03	2.75E-03	2.75E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.30E-05	1.30E-05	1.30E-05	1.30E-05
Lead	6.20E-07	1.50E-05	1.50E-05	3.10E-04	7.50E-03	7.50E-03	7.50E-03
Manganese	7.70E-06	7.70E-06	7.70E-06	3.85E-03	3.85E-03	3.85E-03	3.85E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.20E-04	1.30E-03	1.30E-03	1.30E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	3.15E-02	3.15E-02	3.15E-02	3.15E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	1.75E-04	1.75E-04	1.75E-04	1.75E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	2.00E-02	2.00E-02	2.00E-02	2.00E-02
Acetaldehyde			1.30E-03			0.65	0.65
Acrolein			2.60E-05			1.30E-02	1.30E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.20	0.20	0.20	0.20
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.12	0.12	0.12	0.12
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	1.55	1.55	1.55	1.55
Hexane	9.20E-04	9.20E-04	9.20E-04	0.46	0.46	0.46	0.46
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.02	0.02	0.02	0.02
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.07	0.07
Quinone			1.60E-04			0.08	0.08
Toluene	1.50E-04	2.90E-03	2.90E-03	0.08	1.45	1.45	1.45
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.10	0.44	0.44	0.44
Xylene	2.00E-04	2.00E-04	2.00E-04	0.10	0.10	0.10	0.10
Total HAPs							5.33
Worst Single HAP							1.55 (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

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

**Appendix A.2: Limited Emissions Summary
Dryer/Mixer Slag Processing**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Limited Blast Furnace Slag Usage =

1,655,640

 ton/yr

1.50

 % sulfur
 Unlimited Annual Steel Slag Usage =

1,655,640

 ton/yr

0.66

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.7400	99.0***
Steel Slag**	0.0014	

Methodology

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

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

*** Source-wide SO2 Emissions from the dryer/mixer burner, hot oil heaters, A.C. tank heaters, and slag usage shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Abbreviations

SO2 = Sulfur Dioxide

Appendix A.2: Limited Emissions Summary

**Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Rieth-Riley Construction Co., Inc.
Source Location: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Hot Oil Heating System Units

2 HOH @ 2.0 MMBtu/hr, ea.	4.00
2 AC tank heaters @ 0.48 MMBtu/hr, ea.	0.96
	4.96

Maximum Hot Oil Heater Fuel Input Rate =	4.96	MMBtu/hr	
Natural Gas Usage =	43	MMCF/yr	
No. 2 Fuel Oil Usage =	310,354	gal/yr, and	0.50
Propane Usage =	480,106	gal/yr, and	0.20
Butane Usage =	446,094	gal/yr, and	0.22

	0.50	% sulfur
	0.20	gr/100 ft ³ sulfur
	0.22	gr/100 ft ³ sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)				Unlimited/Uncontrolled Potential to Emit (tons/yr)				Worse Case Fuel (tons/yr)
	Hot Oil Heater				Hot Oil Heater				
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	
PM	1.9	2.0	0.50	0.60	0.041	0.310	0.120	0.134	0.31
PM10/PM2.5	7.6	3.3	0.50	0.60	0.165	0.512	0.120	0.134	0.51
SO2	0.6	71.0	0.02	0.02	0.013	11.018	0.005	0.004	11.02
NOx	100	20.0	13.0	15.0	2.172	3.104	3.121	3.346	3.35
VOC	5.5	0.20	1.00	1.10	0.119	0.031	0.240	0.245	0.25
CO	84	5.00	7.50	8.40	1.825	0.776	1.800	1.874	1.87
Hazardous Air Pollutant									
Arsenic	2.0E-04	5.6E-04			4.3E-06	8.69E-05			8.7E-05
Beryllium	1.2E-05	4.2E-04			2.6E-07	6.52E-05			6.5E-05
Cadmium	1.1E-03	4.2E-04			2.4E-05	6.52E-05			6.5E-05
Chromium	1.4E-03	4.2E-04			3.0E-05	6.52E-05			6.5E-05
Cobalt	8.4E-05				1.8E-06				1.8E-06
Lead	5.0E-04	1.3E-03			1.1E-05	1.96E-04			2.0E-04
Manganese	3.8E-04	8.4E-04			8.3E-06	1.30E-04			1.3E-04
Mercury	2.6E-04	4.2E-04			5.6E-06	6.52E-05			6.5E-05
Nickel	2.1E-03	4.2E-04			4.6E-05	6.52E-05			6.5E-05
Selenium	2.4E-05	2.1E-03			5.2E-07	3.26E-04			3.3E-04
Benzene	2.1E-03				4.6E-05				4.6E-05
Dichlorobenzene	1.2E-03				2.6E-05				2.6E-05
Ethylbenzene									0
Formaldehyde	7.5E-02	6.10E-02			1.6E-03	9.47E-03			0.009
Hexane	1.8E+00				0.04				0.039
Phenol									0
Toluene	3.4E-03				7.4E-05				7.4E-05
Total PAH Haps	negl				negl				0
Polycyclic Organic Matter		3.30E-03				5.12E-04			5.1E-04

Total HAPs = 4.1E-02 1.1E-02 0.050
Worst Single HAP = 3.9E-02 9.5E-03 3.9E-02
(Hexane) (Formaldehyde) (Hexane)

Methodology

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
 Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)

Abbreviations

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

**Appendix A.2: Limited Emissions Summary
Hot Oil Heating System - Process Emissions**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Maximum Fuel Input Rate To Hot Oil Heater = 4.96 MMBtu/hr
 Natural Gas Usage = 43.45 MMCF/yr, and
 No. 2 Fuel Oil Usage = 310,354.29 gal/yr

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	5.65E-04	0.004	0.004
CO	8.90E-06	0.0012	0.193	0.186	0.193
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	5.65E-04	5.43E-04	5.65E-04
Acenaphthene		5.30E-07		8.22E-05	8.22E-05
Acenaphthylene		2.00E-07		3.10E-05	3.10E-05
Anthracene		1.80E-07		2.79E-05	2.79E-05
Benzo(b)fluoranthene		1.00E-07		1.55E-05	1.55E-05
Fluoranthene		4.40E-08		6.83E-06	6.83E-06
Fluorene		3.20E-08		4.97E-06	4.97E-06
Naphthalene		1.70E-05		2.64E-03	2.64E-03
Phenanthrene		4.90E-06		7.60E-04	7.60E-04
Pyrene		3.20E-08		4.97E-06	4.97E-06
Total HAPs				4.14E-03	
Worst Single HAP				2.64E-03	(Naphthalene)

Methodology

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

Abbreviations

CO = Carbon Monoxide

VOC = Volatile Organic Compound

CO2 = Carbon Dioxide

**Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Output Horsepower Rating (hp)	0.0
Limited Hours Operated per Year	500
Limited Throughput (hp-hr/yr)	0
Limited Diesel Fuel Usage (gal/yr)	0

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO ₂	NO _x	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal ¹	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

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

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

Hazardous Air Pollutants (HAPs)

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

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

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

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

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

Methodology

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

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

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

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

Appendix A.2: Limited Emissions Summary
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Output Horsepower Rating (hp)	0.0	Sulfur Content (S) of Fuel (% by weight)	0.50
Limited Hours Operated per Year	500		
Limited Throughput (hp-hr/yr)	0		
Limited Diesel Fuel Usage (gal/yr)	0		

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

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

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

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

²Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

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

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

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

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

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

Methodology

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

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

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

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

**Appendix A.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

The following calculations determine the limited fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Annual Asphalt Production Limitation =	1,000,000	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	0.26	0.29	NA	0.55
Organic PM	3.4E-04	2.5E-04	NA	0.17	0.127	NA	0.30
TOC	0.004	0.012	0.001	2.08	6.09	0.550	8.7
CO	0.001	0.001	3.5E-04	0.67	0.590	0.176	1.44

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

PM/HAPs	0.012	0.014	0	0.027
VOC/HAPs	0.031	0.077	0.008	0.116
non-VOC/HAPs	1.6E-04	1.6E-05	4.2E-05	2.2E-04
non-VOC/non-HAPs	0.15	0.09	0.04	0.28

Total VOCs	1.95	6.09	0.5	8.6
Total HAPs	0.04	0.09	0.008	0.14
		Worst Single HAP		0.044
				(formaldehyde)

Methodology

The asphalt temperature and volatility factor were provided by the source.

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14):

Total PM/PM10 Ef = $0.000181 + 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$

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

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

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

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

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

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

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

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

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

Abbreviations

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate

Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

**Appendix A.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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%	4.4E-04	6.0E-04	NA	1.0E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	4.8E-05	1.8E-05	NA	6.6E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.2E-04	1.7E-04	NA	2.8E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	3.2E-05	7.1E-05	NA	1.0E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.3E-05	0	NA	1.3E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	3.8E-06	0	NA	3.8E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	3.2E-06	0	NA	3.2E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	3.9E-06	0	NA	3.9E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	1.3E-05	1.2E-05	NA	2.5E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	1.8E-04	2.7E-04	NA	4.4E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	6.3E-07	0	NA	6.3E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	8.5E-05	1.9E-04	NA	2.8E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.3E-03	1.3E-03	NA	2.6E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	8.0E-07	0	NA	8.0E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	4.1E-03	6.7E-03	NA	0.011
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	2.1E-03	2.3E-03	NA	4.4E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	3.8E-05	3.8E-05	NA	7.6E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	1.4E-03	2.3E-03	NA	3.7E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	2.6E-04	5.6E-04	NA	8.1E-04
Total PAH HAPs							0.010	0.014	NA	0.025
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	2.0E-03	0	0	2.0E-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)
Limited Emissions**

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%	1.95	6.09	0.52	8.57
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	1.4E-01	1.6E-02	3.6E-02	0.187
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	9.6E-04	3.4E-03	2.5E-04	0.005
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	1.5E-02	6.7E-02	3.9E-03	0.086
Total non-VOC/non-HAPS					7.30%	1.40%	0.152	0.085	0.040	0.28
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.1E-03	1.9E-03	2.9E-04	3.3E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	2.0E-04	3.0E-04	5.3E-05	5.5E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	1.0E-03	2.4E-03	2.7E-04	3.7E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	2.7E-04	9.7E-04	7.2E-05	1.3E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	4.4E-06	2.4E-04	1.2E-06	2.5E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	3.1E-04	1.4E-03	8.3E-05	1.8E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	2.3E-03	0	6.1E-04	2.9E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	5.8E-03	2.3E-03	1.5E-03	0.010
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	1.8E-03	4.2E-02	4.8E-04	0.044
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	3.1E-03	6.1E-03	8.3E-04	0.010
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	3.7E-05	1.9E-05	9.9E-06	6.6E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	1.6E-05	0	1.6E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	1.5E-04	3.3E-04	4.0E-05	5.2E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	1.6E-04	0	4.2E-05	2.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	4.4E-03	3.8E-03	1.2E-03	0.009
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	2.7E-05	0	7.2E-06	3.4E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	8.5E-03	1.2E-02	2.3E-03	0.023
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	1.7E-03	3.5E-03	4.4E-04	5.6E-03
Total volatile organic HAPs					1.50%	1.30%	0.031	0.079	0.008	0.119

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**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

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

$E_f = 1.7 \cdot (s/1.5)^3 \cdot (365-p)/235 \cdot (f/15)$ <p>where E_f = emission factor (lb/acre/day) s = silt content (wt %) p = <input type="text" value="125"/> days of rain greater than or equal to 0.01 inches f = <input type="text" value="15"/> % of wind greater than or equal to 12 mph</p>

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.80	0.439	0.154
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.40	0.148	0.052
Gravel	1.6	1.85	1.20	0.406	0.142
Shingles	0.5	0.58	1.40	0.148	0.052
Slag	3.8	4.40	1.00	0.803	0.281
Totals				2.38	0.83

Methodology

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**Maximum anticipated pile size (acres) provided by the source.

PM2.5 = PM10

Abbreviations

RAP = recycled asphalt pavement

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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.

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

where: E_f = Emission factor (lb/ton)

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

Annual Asphalt Production Limitation = 1,000,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 950,000 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	1.08	0.51	0.08
Front-end loader dumping of materials into feeder bins	1.08	0.51	0.08
Conveyor dropping material into dryer/mixer or batch tower	1.08	0.51	0.08
Total (tons/yr)	3.23	1.53	0.23

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	2.57	1.14
Screening	0.025	0.0087	11.88	4.13
Conveying	0.003	0.0011	1.43	0.52
Limited Potential to Emit (tons/yr) =			15.87	5.80

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**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Unpaved Roads at Industrial Site

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

Annual Asphalt Production Limitation = 1,000,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 950,000 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 50,000 tons/yr
 No. 2 Fuel Oil Limitation = 1,436,125 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	4.2E+04	1.7E+06	300	0.057	2409.7
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	4.2E+04	7.2E+05	300	0.057	2409.7
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	1.4E+03	6.7E+04	300	0.057	78.9
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.4E+03	1.7E+04	300	0.057	78.9
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	1.5E+02	6.7E+03	300	0.057	8.6
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.5E+02	1.8E+03	300	0.057	8.6
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	2.3E+05	4.3E+06	300	0.057	12851.7
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	2.3E+05	3.4E+06	300	0.057	12851.7
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	4.2E+04	1.7E+06	300	0.057	2367.4
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	4.2E+04	7.1E+05	300	0.057	2367.4
Total					6.2E+05	1.3E+07			3.5E+04

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

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	7.34	1.87	0.19	4.83	1.23	0.12	2.41	0.62	0.06
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	7.34	1.87	0.19	4.83	1.23	0.12	2.41	0.62	0.06
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.240	0.061	0.01	0.158	0.040	4.0E-03	0.079	0.020	2.0E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.240	0.061	0.01	0.158	0.040	4.0E-03	0.079	0.020	2.0E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.026	0.007	6.7E-04	0.017	0.004	4.4E-04	0.009	0.002	2.2E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.026	0.007	6.7E-04	0.017	0.004	4.4E-04	0.009	0.002	2.2E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	39.16	9.98	1.00	25.75	6.56	0.66	12.88	3.28	0.33
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	39.16	9.98	1.00	25.75	6.56	0.66	12.88	3.28	0.33
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	7.21	1.84	0.18	4.74	1.21	0.12	2.37	0.60	0.06
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	7.21	1.84	0.18	4.74	1.21	0.12	2.37	0.60	0.06
Totals		107.97	27.52	2.75	71.00	18.09	1.81	35.50	9.05	0.90

Methodology

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

Abbreviations

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

Appendix A.2: Limited Emissions Summary
Paved Roads
Limited Emissions

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

Paved Roads at Industrial Site

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

Annual Asphalt Production Limitation =	1,000,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	950,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	50,000	tons/yr
No. 2 Fuel Oil Limitation =	1,436,125	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	4.2E+04	1.7E+06	300	0.057	2409.7
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	4.2E+04	7.2E+05	300	0.057	2409.7
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	1.4E+03	6.7E+04	300	0.057	78.9
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.4E+03	1.7E+04	300	0.057	78.9
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	1.5E+02	6.7E+03	300	0.057	8.6
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.5E+02	1.8E+03	300	0.057	8.6
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	2.3E+05	4.3E+06	300	0.057	12851.7
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	2.3E+05	3.4E+06	300	0.057	12851.7
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	4.2E+04	1.7E+06	300	0.057	2367.4
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	4.2E+04	7.1E+05	300	0.057	2367.4
Total					6.2E+05	1.3E+07			3.5E+04

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

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

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00064	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
 where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

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

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.18	0.04	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.18	0.04	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.006	0.001	2.9E-04	0.005	0.001	2.6E-04	0.003	5.4E-04	1.3E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.006	0.001	2.9E-04	0.005	0.001	2.6E-04	0.003	5.4E-04	1.3E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	6.4E-04	1.3E-04	3.1E-05	5.9E-04	1.2E-04	2.9E-05	2.9E-04	5.9E-05	1.4E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	6.4E-04	1.3E-04	3.1E-05	5.9E-04	1.2E-04	2.9E-05	2.9E-04	5.9E-05	1.4E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.96	0.19	0.05	0.87	0.17	0.04	0.44	0.09	0.02
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.96	0.19	0.05	0.87	0.17	0.04	0.44	0.09	0.02
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.18	0.04	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.18	0.04	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Totals		2.63	0.53	0.13	2.41	0.48	0.12	1.20	0.24	0.06

Methodology

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

Abbreviations

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

**Appendix A.2: Limited Emissions Summary
Cold Mix Asphalt Production and Stockpiles**

Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel

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

Limited VOC Emissions from the Sum of the Liquid Binders = 54.62 tons/yr

Volatiles 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%	57.49	54.62	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	78.03	54.62	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	218.48	54.62	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	117.72	54.62	2.155
Other asphalt with solvent binder	25.9%	2.5%	2,184.80	54.62	40.00
Worst Case Limited PTE of VOC =				54.62	

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) =	14.25
Limited PTE of Single HAP (tons/yr) =	4.92 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.

Abbreviations

VOC = Volatile Organic Compounds
 PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Gasoline Fuel Transfer and Dispensing Operation**

**Company Name: Rieth-Riley Construction Co., Inc.
Source Address: 25200 Stat Road 23, South Bend, IN 46614
Permit Number: F141-36333-00027
Reviewer: Tamera Wessel**

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:

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

Volatile Organic Compounds

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

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%	
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0%	Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00	
Limited PTE of Single HAP (tons/yr) =	0.00	Xylenes

Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

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

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

April 8, 2016

Mr. John Berscheid
Rieth-Riley Construction Co., Inc.
P. O. Box 477
Goshen, Indiana 46527-0477

Re: Public Notice
Rieth-Riley Construction Co., Inc.
Permit Level: FESOP - Renewal
Permit Number: 141-36333-00027

Dear Mr. Berscheid:

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

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM's website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the South Bend Tribune in South Bend, Indiana publish the abbreviated version of the public notice no later than April 13, 2016. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the St. Joseph County Public Library – LaSalle Branch, 3232 W. Ardmore Trail in South Bend, Indiana. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Tamera Wessel, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 4-8530 or dial (317) 234-8530.

Sincerely,

Vicki Biddle

Vicki Biddle
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 2/17/2016



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

April 8, 2016

South Bend Tribune
225 W. Colfax
South Bend, Indiana 46626

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Rieth-Riley Construction Co., St. Joseph County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than April 13, 2016.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1345, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Vicki Biddle at 800-451-6027 and ask for extension 3-6867 or dial 317-233-6867.

Sincerely,

Vicki Biddle

Vicki Biddle
Permit Branch
Office of Air Quality

Permit Level: FESOP - Renewal
Permit Number: 141-36333-00027

Enclosure

PN Newspaper.dot 2/17/2016



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

April 8, 2016

To: St. Joseph County Public Library – LaSalle Branch

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

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

Applicant Name: Rieth-Riley Construction Co., Inc.
Permit Number: 141-36333-00027

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

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

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

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

If you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library.dot 2/17/2016



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Notice of Public Comment

April 8, 2016
Rieth-Riley Construction Co., Inc.
141-36333-00027

Dear Concerned Citizen(s):

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

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

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

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

Enclosure
PN AAA Cover.dot 2/17/2016

Mail Code 61-53

IDEM Staff	VBIDDLE 4/8/2016 Rieth-Riley Construction Co., Inc. 141-36333-00027		DRAFT	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: CERTIFICATE OF MAILING ONLY	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		John Berscheit Rieth-Riley Construction Co., Inc. PO Box 477 Goshen IN 46527-0477 (Source CAATS)										
2		Henry & Helen Schultz 15278 Kerlin Dr Granger IN 46530 (Affected Party)										
3		Mr. Wayne Falda South Bend Tribune 255 W Colfax Ave South Bend IN 46626 (Affected Party)										
4		LaSalle Branch - St. Joseph County Public Library 3232 West Ardmore Trail South Bend IN 46628 (Library)										
5		Mr. William Foose 51740 Juniper Rd South Bend IN 46637 (Affected Party)										
6		South Bend City Council / Mayors Office 227 W. Jefferson Blvd. South Bend IN 46601 (Local Official)										
7		St. Joseph County Board of Commissioners 227 West Jefferson Blvd, South Bend IN 46601 (Local Official)										
8		St. Joseph County Health Department 227 W Jefferson Blvd, Room 825 South Bend IN 46601-1870 (Health Department)										
9												
10												
11												
12												
13												
14												
15												

Total number of pieces Listed by Sender 8	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.
---	--	--	--