NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

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

for Temple and Temple Excavating and Paving, Inc. in Washington County

FESOP Renewal No.: F175-41089-00028

The Indiana Department of Environmental Management (IDEM) has received an application from Temple and Temple Excavating and Paving, Inc. located at 114 Tarr Ave., Salem, IN 47167 for a renewal of its FESOP issued on March 20, 2015. If approved by IDEM’s Office of Air Quality (OAQ), this proposed renewal would allow Temple and Temple Excavating and Paving, Inc. to continue to operate its existing source.

This draft permit 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:

Salem Public Library
212 N S Main St.,
Salem, IN 47167

and

IDEM Southeast Regional Office
820 West Sweet Street
Brownstown, IN 47220-9557

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

A copy of the preliminary findings is also available via IDEM’s Virtual File Cabinet (VFC). Please go to: http://www.in.gov/idem/ and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria.

How can you participate in this process?

The date that this notice is posted on IDEM’s website (https://www.in.gov/idem/5474.htm) 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 F 175-41069-00028 in all correspondence.

Comments should be sent to:

Taylor Wade
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for Taylor Wade or (317) 233-0868
Or dial directly: (317) 233-0868
Fax: (317) 232-6749 attn: Taylor Wade
E-mail: twade@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 Air Permits page on the Internet at: http://www.in.gov/idem/airquality/2356.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 Taylor Wade of my staff at the above address.

Heath Hartley, Section Chief
Permits Branch
Office of Air Quality
Temple and Temple Excavating & Paving Inc.
114 Tarr Avenue
Salem, Indiana 47167

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

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

SOURCE SUMMARY

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

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

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

Source Address: 114 Tarr Avenue, Salem, Indiana 47167  
General Source Phone Number: 812-883-6644  
SIC Code: 2951 (Asphalt Paving Mixtures and Blocks)  
County Location: Washington  
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:

Hot Mix

(a) One (1) stationary hot asphalt batch mixer and aggregate dryer, identified as 3238, constructed in 1979, with a maximum capacity of 165 tons/hr using oil, sand, and crushed stone in the aggregate mix, equipped with one (1) natural gas-fired burner with a maximum heat input capacity of 85 MMBtu/hr, using a baghouse, identified as CE3238 as control, and exhausting to stack ST3238.

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

Cold Mix

(b) Cold-mix asphalt manufacturing

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

This stationary source also includes the following insignificant activities:

(a) One (1) natural gas-fired hot oil heater, identified as OH-01, constructed in 1979, permitted in 2015, with a heat input capacity of 2.00 MMBtu per hour, exhausting to stack ST-01.

(b) Diesel fuel (excluding gasoline) dispensing facilities having storage capacities less than or equal to 500 gallons and dispensing less than or equal to 230,000 gallons per month.

(c) Paved and unpaved roads.

(d) Truck and conveyor transfer operations.

Under 40 CFR 60, Subpart I, this is an affected facility.
(e) Aggregate stockpiles of mixed gravel, limestone, and sand.

(f) Storage tanks emitting less than five (5) tons per year of VOCs, less than one (1) ton per year of a single HAP, and less than two and one-half (2.5) tons per year of any combination of HAPs:

(1) Two (2) above-ground, liquid asphalt storage tanks, identified as HP-2 and HP-3, constructed in 1979, permitted in 2015, each with a maximum storage capacity of 6,000 gallons.

(2) One (1) above-ground, liquid asphalt storage tank, identified as PG-64-22, constructed in 1979, permitted in 2015, with a maximum storage capacity of 20,000 gallons.

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, F175-41089-00028, 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:
it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and

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.

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.

An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

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

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.

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).

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 Southeast Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;
   Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
   Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
   Facsimile Number: 317-233-6865
   Southeast Regional Office phone: (812) 358-2027; fax: (812) 358-2058.
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
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 F175-41089-00028 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. 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 2-6-3(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 5
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

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

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

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

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

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

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

B.19 Source Modification Requirement [326 IAC 2-8-11.1]
A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]
Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

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

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

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

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

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

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

(a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

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

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

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM), 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.3 Opacity [326 IAC 5-1]

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

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

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

C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]
The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]
The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

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

C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]
Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the attached plan as in Attachment A.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]
(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:
Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

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

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

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

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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.
Compliance Requirements [326 IAC 2-1.1-11]

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

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

Compliance Monitoring Requirements [326 IAC 2-8-4(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) stationary hot asphalt batch mixer and aggregate dryer, identified as 3238, constructed in 1979, with a maximum capacity of 165 tons/hr using oil, sand, and crushed stone in the aggregate mix, equipped with one (1) natural gas-fired burner with a maximum heat input capacity of 85MMBtu/hr, using a baghouse, identified as CE3238 as control, and exhausting to stack ST3238.

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

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

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

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

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

(a) The amount of hot mix asphalt produced in the batch mixer and dryer shall not exceed 487,776 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM emissions from the aggregate mixing and drying operation shall not exceed 0.926 pound PM per ton of asphalt mix.

(c) The Permittee shall control PM emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

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

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

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)) not applicable, the Permittee shall comply with the following:

(a) The amount of hot mix asphalt produced in the batch mixer and dryer shall not exceed 487,776 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM_{10} emissions from the dryer/mixer shall not exceed 0.378 pounds per ton of asphalt processed.

(c) The PM_{2.5} emissions from the dryer/mixer shall not exceed 0.400 pounds per ton of asphalt processed.

(d) The CO emissions from the dryer/mixer shall not exceed 0.40 pounds per ton of asphalt processed.
(e) The Permittee shall control PM$_{10}$ and PM$_{2.5}$ emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

Compliance with these limits, combined with the potential to emit PM$_{10}$, PM$_{2.5}$ from all other emission units at this source, shall limit the source-wide total potential to emit of PM$_{10}$, PM$_{2.5}$ to less than one-hundred (100) tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

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

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

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

D.1.4 Particulate Matter (PM) Control

In order to assure compliance with Conditions D.1.1(b), D.1.2(b), and D.1.2(c) the baghouse for particulate matter control shall be in operation and control emissions from the dryer/mixer at all times the dryer/mixer facility is in operation.

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.1.5 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the Permittee shall perform PM, PM10 and PM2.5 testing of the baghouse, identified as CE3238, utilizing methods as approved by the Commissioner at least once every 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.

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

D.1.6 Parametric Monitoring

The Permittee shall record the pressure drop across baghouse (CE3238) at least once per day when the associated dryer/mixer unit is in operation. When, for any one reading, the pressure drop across a baghouse is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 3.0 and 6.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments 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.1.7 Broken or Failed Bag Detection

(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 line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section 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.

D.1.8 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 produced in the drum mix aggregate dryer.

(b) To document the compliance status with Condition D.1.6, the Permittee shall maintain daily records of pressure drop across the baghouse(s). 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 process did not operate that day).

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

D.1.9 Reporting Requirements

A quarterly report of the information to document the compliance status with D.1.1(a) and D.1.2(a) 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 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).
SECTION D.2  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(b) Cold-mix asphalt manufacturing

(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 Rules for Asphalt Pavers [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 2-2] [326 IAC 2-8-4] [326 IAC 2-4-1]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, the VOC emissions from the cold-mix (cutback) asphalt production shall be limited as follows:

(a) Pursuant to 326 IAC 2-8-4, the VOC emissions from the sum of the binders shall not exceed 87.99 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) Liquid binders used in the production of cold mix asphalt shall be defined as follows:

(1) **Cut back asphalt rapid cure**, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95% by weight of VOC solvent evaporating.

(2) **Cut back asphalt medium cure**, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70% by weight of VOC solvent evaporating.

(3) **Cut back asphalt slow cure**, containing a maximum of 20% of the liquid binder by weight of VOC solvent and 25% by weight of VOC solvent evaporating.

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

(5) **Other asphalt with solvent binder**, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating.

(c) The liquid binder used in cold mix asphalt production shall be limited as follows:
(1) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 92.62 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 125.70 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(3) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 351.97 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(4) The amount of VOC solvent used in emulsified asphalt shall not exceed 189.64 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(5) The amount of VOC solvent used in all other asphalt shall not exceed 3,519.73 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

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

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

<table>
<thead>
<tr>
<th>Type of binder</th>
<th>Adjustment factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>cutback asphalt rapid cure</td>
<td>1.05</td>
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<tr>
<td>cutback asphalt medium cure</td>
<td>1.43</td>
</tr>
<tr>
<td>cutback asphalt slow cure</td>
<td>4.00</td>
</tr>
<tr>
<td>emulsified asphalt</td>
<td>2.16</td>
</tr>
<tr>
<td>other asphalt</td>
<td>40.00</td>
</tr>
</tbody>
</table>

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 one hundred (100) tons per twelve (12) consecutive month period, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, and shall render the source minor under Section 112 of the Clean Air Act.
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, 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.

(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 of this permit 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 D.2.2 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 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).
SECTION D.3  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) natural gas-fired hot oil heater, identified as OH-01, constructed in 1979, permitted in 2015, with a heat input capacity of 2.00 MMBtu per hour, exhausting to stack ST-01.

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

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

D.3.1 Particulate [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Particulate Emissions Limitations for Sources of Indirect Heating) the PM emissions from the hot oil heater shall be limited to 0.6 pounds per MMBtu heat input.

D.3.2 Preventive Maintenance Plan  [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for this facility. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.
**Emissions Unit Description:**

(a) One (1) stationary hot asphalt batch mixer and aggregate dryer, identified as 3238, constructed in 1979, with a maximum capacity of 165 tons/hr using oil, sand, and crushed stone in the aggregate mix, equipped with one (1) natural gas-fired burner with a maximum heat input capacity of 85 MMBtu/hr, using a baghouse, identified as CE3238 as control, and exhausting to stack ST3238.

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

(d) Truck and conveyor transfer operations.

Under 40 CFR 60, Subpart I, this is 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 Hot-mix Asphalt Facilities NSPS [326 IAC 12] [40 CFR Part 60, Subpart I]**

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart I (included as Attachment B to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit(s) listed above:

1. 40 CFR 60.90
2. 40 CFR 60.91
3. 40 CFR 60.92
4. 40 CFR 60.93

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

**E.1.3 Testing Requirements [326 IAC 2-1.1-11] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

In order to document the compliance status with Condition E.1.2, the Permittee shall perform the testing required under 40 CFR 60, Subpart I, utilizing methods as approved by the Commissioner, at least once every five (5) years from the date of the most recent valid compliance demonstration. Section C - Performance Testing contains the Permittee’s obligation with regard to the performance testing required by this condition.
## FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

**Source Name:** Temple and Temple Excavating & Paving Inc.  
**Source Address:** 114 Tarr Avenue, Salem, Indiana 47167  
**FESOP Permit No.:** F175-41089-00028

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.

<table>
<thead>
<tr>
<th>Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Name:</td>
</tr>
<tr>
<td>Title/Position:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
</tbody>
</table>
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Temple and Temple Excavating & Paving Inc.
Source Address: 114 Tarr Avenue, Salem, Indiana 47167
FESOP Permit No.: F175-41089-00028

This form consists of 2 pages

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
  • The Permittee must notify the Office of Air Quality (OAQ), within four (4) 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

<table>
<thead>
<tr>
<th>Date/Time Emergency started:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time Emergency was corrected:</td>
</tr>
<tr>
<td>Was the facility being properly operated at the time of the emergency?</td>
</tr>
<tr>
<td>Describe:</td>
</tr>
<tr>
<td>Type of Pollutants Emitted: TSP, PM-10, SO₂, VOC, NOₓ, CO, Pb, other:</td>
</tr>
<tr>
<td>Estimated amount of pollutant(s) emitted during emergency:</td>
</tr>
<tr>
<td>Describe the steps taken to mitigate the problem:</td>
</tr>
<tr>
<td>Describe the corrective actions/response steps taken:</td>
</tr>
<tr>
<td>Describe the measures taken to minimize emissions:</td>
</tr>
<tr>
<td>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:</td>
</tr>
</tbody>
</table>

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: Temple and Temple Excavating & Paving Inc.  
Source Address: 114 Tarr Avenue, Salem, Indiana 47167  
FESOP Permit No.: F175-41089-00028  
Facility: One (1) stationary hot mix asphalt batch mixer and aggregate dryer (3238)  
Parameter: Asphalt Production  
Limit: The amount of asphalt produced shall not exceed 487,776 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

<table>
<thead>
<tr>
<th>Month</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 1 + Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Asphalt produced (tons) This Month</td>
<td>Asphalt produced (tons) Previous 11 Months</td>
<td>Asphalt produced (tons) 12 Month Total</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

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

Submitted by: ______________________________  
Title / Position: ______________________________  
Signature: ______________________________  
Date: ______________________________  
Phone: ______________________________
**Source Name:** Temple & Temple Excavating & Paving, Inc.  
**Source Address:** 114 Tarr Avenue, Salem, Indiana 47167  
**FESOP Permit No.:** F175-41089-00028  
**Facility:** Cold-mix asphalt production  
**Parameter:** **Binder Usage / VOC Emissions**  
**Limit:** VOC emissions from the sum of the binders shall not exceed 87.99 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

<table>
<thead>
<tr>
<th>Type of Binder</th>
<th>Binder Usage Limit (tons/yr) (per 12 consecutive month period)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutback Asphalt Rapid Cure</td>
<td>92.62</td>
</tr>
<tr>
<td>Cutback Asphalt Medium Cure</td>
<td>125.70</td>
</tr>
<tr>
<td>Cutback Asphalt Slow Cure</td>
<td>351.97</td>
</tr>
<tr>
<td>Emulsified Asphalt</td>
<td>189.64</td>
</tr>
<tr>
<td>Other Asphalt</td>
<td>3,519.73</td>
</tr>
</tbody>
</table>
### FESOP Quarterly Report - Binder Usage / VOC Emissions

<table>
<thead>
<tr>
<th>Month</th>
<th>Solvent Usage this Month (Tons)</th>
<th>Column 1 Usage This Month</th>
<th>Column 2 Usage Previous 11 Months</th>
<th>Column 1 + Column 2 Usage 12 Month Total</th>
<th>Equation Results VOC Emissions (tons per 12 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cutback asphalt rapid cure liquid binder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cutback asphalt medium cure liquid binder</td>
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<tr>
<td></td>
<td>Cutback asphalt slow cure liquid binder</td>
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</tr>
<tr>
<td></td>
<td>Emulsified asphalt with solvent liquid binder</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Other asphalt with solvent liquid binder</td>
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</tr>
</tbody>
</table>

|       | 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. Submitted by: ____________________________ Date: __________
- Deviation/s occurred in this reporting period. Title / Position: __________________________ Phone: __________
  Deviation has been reported on: __________________________ Signature: __________________________

\[
\text{VOC Emitted (tons/day)} = \text{VOC solvent used for each binder (tons/day) times adjustment factor}
\]

<table>
<thead>
<tr>
<th>Type of Binder</th>
<th>Adjustment Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutback Asphalt Rapid Cure</td>
<td>1.053</td>
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<tr>
<td>Cutback Asphalt Medium Cure</td>
<td>1.429</td>
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<tr>
<td>Cutback Asphalt Slow Cure</td>
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<tr>
<td>Emulsified Asphalt</td>
<td>2.155</td>
</tr>
<tr>
<td>Other Asphalt</td>
<td>40.000</td>
</tr>
</tbody>
</table>
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: Temple and Temple Excavating & Paving Inc.  
Source Address: 114 Tarr Avenue, Salem, Indiana 47167  
FESOP Permit No.: F175-41089-00028

**Months: ___________ to ____________ Year: ______________**

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

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

<table>
<thead>
<tr>
<th>Permit Requirement</th>
<th>Date of Deviation:</th>
<th>Duration of Deviation:</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Number of Deviations:</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Probable Cause of Deviation:</th>
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<tr>
<th>Response Steps Taken:</th>
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<table>
<thead>
<tr>
<th>Permit Requirement</th>
<th>Date of Deviation:</th>
<th>Duration of Deviation:</th>
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<th>Number of Deviations:</th>
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<tr>
<th>Probable Cause of Deviation:</th>
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<tr>
<th>Response Steps Taken:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit Requirement (specify permit condition #)</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Date of Deviation:</td>
</tr>
<tr>
<td>Duration of Deviation:</td>
</tr>
<tr>
<td>Number of Deviations:</td>
</tr>
<tr>
<td>Probable Cause of Deviation:</td>
</tr>
<tr>
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<tr>
<td>Probable Cause of Deviation:</td>
</tr>
<tr>
<td>Response Steps Taken:</td>
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</table>

Form Completed by: ______________________________

Title / Position: ________________________________

Date: ________________________________

Phone: ________________________________
Fugitive Dust Control Plan

<table>
<thead>
<tr>
<th>Source Name:</th>
<th>Temple &amp; Temple Excavating &amp; Paving, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Location:</td>
<td>114 Tarr Avenue, Salem, Indiana 47167</td>
</tr>
<tr>
<td>County:</td>
<td>Washington</td>
</tr>
<tr>
<td>SIC Code:</td>
<td>2951 (Asphalt Paving Mixtures and Blocks)</td>
</tr>
<tr>
<td>Plant Operator:</td>
<td>Oscar Scott</td>
</tr>
</tbody>
</table>

The following control measures shall be in place to control the fugitive particulate matter (dust) emissions from paved roads, unpaved roads, parking lots, process equipment, and stockpiles. The control plan shall be followed during prolonged dry periods to prevent dust from leaving the site.

1. Paved Roads and Parking Lots:
   a. The paved entrance road to the asphalt plant shall be cleaned by brooming when wet on an as needed basis.

2. Unpaved Roads and Parking Lots:
   a. Unpaved areas will be treated with water on an as needed basis during dry conditions.

3. Fugitive dust emissions from aggregate stockpiles shall be controlled by the following measures.
   a. Treat around the stockpile areas with water on an as needed basis.
   b. Treat the stockpile with water on an as needed basis.

4. Fugitive dust emissions from outdoor conveyors of aggregate shall be controlled by applying water at the feed point on an as needed basis.

5. Fugitive dust emissions resulting from the transferring of aggregate shall be controlled by one or more of the following counter measures.
   a. Minimize the vehicular distance between transfer points.
   b. Apply water on transfer points on an as needed basis.

6. Fugitive dust emissions from transporting of aggregate by truck, front end loader shall be controlled by one or more of the following counter measures.
   a. Spray the aggregate with water as needed.
   b. Maintain a 10 mile per hour speed limit in the yard.

7. Fugitive dust emissions resulting from the loading and unloading of aggregate shall be controlled by one or more of the following counter measures.
   a. Reduce free fall distance to a minimum.
   b. Spray aggregate with water on an as need basis.

“An as needed basis,” means the frequency and quantity of water applied necessary to minimize visible dust particulate emissions.

Records shall be kept and maintained which document all control measures and activities to be implemented in accordance with the approved control plan. Said records shall be available upon the request of the commissioner, and shall be retained for three (3) years.
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.

§ 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.

§ 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.

§ 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 Description and Location

<table>
<thead>
<tr>
<th>Source Name:</th>
<th>Temple and Temple Excavating and Paving, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Location:</td>
<td>114 Tarr Ave., Salem, IN 47167</td>
</tr>
<tr>
<td>County:</td>
<td>Washington</td>
</tr>
<tr>
<td>SIC Code:</td>
<td>2951 (Asphalt Paving Mixtures and Blocks)</td>
</tr>
<tr>
<td>Permit Renewal No.:</td>
<td>F 175-41089-00028</td>
</tr>
<tr>
<td>Permit Reviewer:</td>
<td>Taylor Wade</td>
</tr>
</tbody>
</table>

On February 19, 2019, Temple and Temple Excavating and Paving, Inc. submitted an application to the Office of Air Quality (OAQ) requesting to renew its operating permit. OAQ has reviewed the operating permit renewal application from Temple and Temple Excavating and Paving, Inc. relating to the operation of a stationary hot mix asphalt production plant. Temple and Temple Excavating and Paving, Inc. was issued its first FESOP (F 175-33877-00028) on March 20, 2015.

Existing Approvals

The source was issued FESOP Renewal No. F 175-41089-00028 on March 20, 2015. There have been no subsequent approvals issued.

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.

Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

(a) One (1) stationary hot asphalt batch mixer and aggregate dryer, identified as 3238, constructed in 1979, with a maximum capacity of 165 tons/hr using oil, sand, and crushed stone in the aggregate mix, equipped with one (1) natural gas-fired burner with a maximum heat input capacity of 85MMBtu/hr, using a baghouse, identified as CE3238 as control, and exhausting to stack ST3238.

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

(b) Cold-mix asphalt manufacturing

Insignificant Activities

The source also consists of the following insignificant activities:

(a) One (1) natural gas-fired hot oil heater, identified as OH-01, constructed in 1979, permitted in 2015, with a heat input capacity of 2.00 MMBtu per hour, exhausting to stack ST-01.

(b) Diesel fuel (excluding gasoline) dispensing facilities having storage capacities less than or equal to 500 gallons and dispensing less than or equal to 230,000 gallons per month.

(c) Paved and unpaved roads.
(d) Truck and conveyor transfer operations.

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

(e) Aggregate stockpiles of mixed gravel, limestone, and sand.

(f) Storage tanks emitting less than five (5) tons per year of VOCs, less than one (1) ton per year of a single HAP, and less than two and one-half (2.5) tons per year of any combination of HAPs:

(1) Two (2) above-ground, liquid asphalt storage tanks, identified as HP-2 and HP-3, constructed in 1979, permitted in 2015, each with a maximum storage capacity of 6,000 gallons.

(2) One (1) above-ground, liquid asphalt storage tank, identified as PG-64-22, constructed in 1979, permitted in 2015, with a maximum storage capacity of 20,000 gallons.

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**Enforcement Issue**

There are no enforcement actions pending.

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**Emission Calculations**

See Appendix A of this Technical Support Document for detailed emission calculations.

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**County Attainment Status**

The source is located in Washington County.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO₂</td>
<td>Better than national standards.</td>
</tr>
<tr>
<td>CO</td>
<td>Unclassifiable or attainment effective November 15, 1990.</td>
</tr>
<tr>
<td>O₃</td>
<td>Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.¹</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>Unclassifiable or attainment effective April 5, 2005, for the annual PM₂.₅ standard.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM₂.₅ standard.</td>
</tr>
<tr>
<td>NO₂</td>
<td>Unclassifiable effective December 15, 1990.</td>
</tr>
<tr>
<td>Pb</td>
<td>Unclassifiable or attainment effective December 31, 2011.</td>
</tr>
</tbody>
</table>

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

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NOₓ) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOₓ emissions are considered when evaluating the rule applicability relating to ozone. Washington County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOₓ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM₂.₅

Washington County has been classified as attainment for PM₂.₅. Therefore, direct PM₂.₅, SO₂, and NOₓ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
Other Criteria Pollutants
Washington County has been classified as attainment or unclassifiable in Indiana for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one (1) of the twenty-eight (28) listed source categories under 326 IAC 2-2-1(ff)(1), 326 IAC 2-3-2(g), or 326 IAC 2-7-1(22)(B), and there is no applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The fugitive emissions of hazardous air pollutants (HAP) are counted toward the determination of Part 70 Permit applicability and source status under Section 112 of the Clean Air Act (CAA).

Greenhouse Gas (GHG) Emissions

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.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

<table>
<thead>
<tr>
<th>Unrestricted Potential Emissions (ton/year)</th>
<th>PM$^1$</th>
<th>PM$_{10}^1$</th>
<th>PM$_{2.5}^1,2$</th>
<th>SO$_2$</th>
<th>NO$_x$</th>
<th>VOC</th>
<th>CO</th>
<th>Single HAP$^3$</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PTE of Entire Source Excluding Fugitives*</td>
<td>23,126.42</td>
<td>3,252.22</td>
<td>195.20</td>
<td>3.33</td>
<td>38.11</td>
<td>5.97</td>
<td>289.82</td>
<td>1.95</td>
<td>5.53</td>
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<tr>
<td>Fugitives from NSPS/NESHAP Source Category (Source-wide)</td>
<td>67.82</td>
<td>19.86</td>
<td>4.19</td>
<td>0.00</td>
<td>0.00</td>
<td>17,382.47</td>
<td>2.08</td>
<td>1,563.31</td>
<td>4,530.97</td>
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<tr>
<td>Total PTE of Entire Source</td>
<td>23,194.24</td>
<td>3,272.08</td>
<td>198.80</td>
<td>3.33</td>
<td>38.11</td>
<td>17,388.45</td>
<td>291.90</td>
<td>1,563.31</td>
<td>4,536.50</td>
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</tbody>
</table>
Appendix A of this TSD reflects the detailed unrestricted potential emissions of the source.

(a) The potential to emit (as defined in 326 IAC 2-7-1(30)) of PM, PM10, PM2.5, VOC and CO are equal to or greater than 100 tons per year. However, the Permittee has agreed to limit the source's PM, PM10, PM2.5, VOC and CO emissions to less than Title V major source thresholds. Therefore, the source will be issued a FESOP Renewal.

(b) The potential to emit (as defined in 326 IAC 2-7-1(30)) of all other criteria pollutants are less than 100 tons per year.

(c) The potential to emit (as defined in 326 IAC 2-7-1(30)) of any single HAP is equal to or greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(30)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. However, the source will be issued FESOP Renewal because the source will limit HAP emissions to less than the Title V major source threshold levels. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) subject to the provisions of 326 IAC 2-7.
The source opted to take limit(s) in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to this source and to render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA). See Technical Support Document (TSD) State Rule Applicability - Entire Source section, 326 IAC 2-8 (FESOP), 326 IAC 2-2 (PSD), and 326 IAC 2-3 (Emission Offset), and 326 IAC 20 (Hazardous Air Pollutants) for more information regarding the limit(s).

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant is emitted at a rate of two hundred fifty (250) tons per year or more and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This source is not a major source of HAP, as defined in 40 CFR 63.2, because HAP emissions are 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, this source is an area source under Section 112 of the Clean Air Act (CAA).

Federal rule applicability for this source has been reviewed as follows:

**New Source Performance Standards (NSPS):**

(a) The requirements of the New Source Performance Standard for Asphalt Processing and Asphalt Roofing Manufacture, 40 CFR 60, Subpart UU and 326 IAC 12, are not included in the permit for this source, because this source is not classified as an asphalt processing plant, asphalt roofing plant, or petroleum refinery as defined in 40 CFR 63.471.

(b) This source is subject to the New Source Performance Standards for Hot Mix Asphalt Facilities, 40 CFR 60, Subpart I and 326 IAC 12, because it meets the definition of a hot mix-mix asphalt facility and was constructed after June 11, 1973. The unit subject to this rule includes the following:

(1) One (1) stationary hot asphalt batch mixer and aggregate dryer, identified as 3238, constructed in 1979, with a maximum capacity of 165 tons/hr using oil, sand, and crushed stone in the aggregate mix, equipped with one (1) natural gas-fired burner with a maximum heat input capacity of 85MMBtu/hr, using a baghouse, identified as CE3238 as control, and exhausting to stack ST3238.

(2) Truck and conveyor transfer operations.

The hot asphalt batch mixer and aggregate dryer and truck and conveyor transfer operations are subject to the following portions of Subpart I.
The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the hot asphalt batch mixer and aggregate dryer except as otherwise specified in 40 CFR 60, Subpart I.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP):

(d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL and 326 IAC 20-17 are not included in the permit for this source, since it does not prepare asphalt flux or asphalt roofing materials. Additionally, it is not a major source of HAPs.

(e) 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, are not included in the permit for this source, since this source is not classified as an asphalt processing operation or asphalt roofing manufacturer as defined in 40 CFR 63.11566, and it does not engage in the preparation of asphalt flux or asphalt roofing materials.

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

Compliance Assurance Monitoring (CAM):

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

State rule applicability for this source has been reviewed as follows:

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

326 IAC 1-5-2 (Emergency Reduction Plans)
The source is subject to 326 IAC 1-5-2.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The provisions of 326 IAC 2-4.1 apply to any owner or operator who constructs or reconstructs a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.41, after July 27, 1997, unless the major source has been specifically regulated under or exempted from regulation under a NESHAP that was issued pursuant to Section 112(d), 112(h), or 112(j) of the Clean Air Act (CAA) and incorporated under 40 CFR 63. On and after June 29, 1998, 326 IAC 2-4.1 is intended to implement the requirements of Section 112(g)(2)(B) of the Clean Air Act (CAA).

The operation of this source will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.
**326 IAC 2-6 (Emission Reporting)**
This source is not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an operating permit pursuant to 326 IAC 2-7 (Part 70); it is not located in Lake, Porter, or LaPorte County, and its potential to emit lead is less than 5 tons per year. Therefore, this rule does not apply.

**326 IAC 2-2 (PSD) 326 IAC 2-8-4 (FESOP) and 326 IAC 20 (Hazardous Air Pollutants)**
FESOP applicability is discussed under the Potential to Emit After Issuance section of this document.

**326 IAC 2-2 (PSD) and 326 IAC 2-3 (Emission Offset)**
PSD and Emission Offset applicability is discussed under the Potential to Emit After Issuance section of this document.

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

(a) The amount of asphalt processed shall not exceed 487,776 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM emissions from the batch dryer/mixer shall not exceed 0.926 pounds per ton of asphalt processed.

(c) The Permittee shall control PM emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

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.

**FESOP Limit(s)**
Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD), not applicable, the Permittee shall comply with the following:

**Hot Mix**

(a) The amount of asphalt processed shall not exceed 487,776 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM\textsubscript{10} emissions from the dryer/mixer shall not exceed 0.378 pounds per ton of asphalt produced.

(c) PM\textsubscript{2.5} emissions from the dryer/mixer shall not exceed 0.400 pounds per ton of asphalt produced.

(d) CO emissions from the dryer/mixer shall not exceed 0.40 pounds per ton of asphalt produced.

(e) The Permittee shall control PM\textsubscript{10} and PM\textsubscript{2.5} emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

Compliance with these limits, combined with the potential to emit PM\textsubscript{10}, PM\textsubscript{2.5}, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM\textsubscript{10}, PM\textsubscript{2.5}, and CO to less than 100 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

**Cold Mix**
FESOP Limit(s)

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, the VOC emissions from the cold-mix (cutback) asphalt production shall be limited as follows:

(1) VOC emissions from the sum of the binders shall not exceed 87.99 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) Liquid binders used in the production of cold mix asphalt shall be defined as follows:

(A) Cut back asphalt rapid cure, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95% by weight of VOC solvent evaporating.

(B) Cut back asphalt medium cure, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70% by weight of VOC solvent evaporating.

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

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

(E) Other asphalt with solvent binder, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating.

(3) The liquid binder used in cold mix asphalt production shall be limited as follows:

(A) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 92.62 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(B) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 125.70 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(C) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 351.97 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(D) The amount of VOC solvent used in emulsified asphalt shall not exceed 189.64 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(E) The amount of VOC solvent used in all other asphalt shall not exceed 3,519.73 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(F) The VOC solvent allotments in (A) through (E) 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.
VOC emitted (tons/yr) = VOC solvent used for each binder (tons/yr) / Adjustment factor

<table>
<thead>
<tr>
<th>Type of binder</th>
<th>adjustment factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>cutback asphalt rapid cure</td>
<td>1.05</td>
</tr>
<tr>
<td>cutback asphalt medium cure</td>
<td>1.43</td>
</tr>
<tr>
<td>cutback asphalt slow cure</td>
<td>4.00</td>
</tr>
<tr>
<td>emulsified asphalt</td>
<td>2.16</td>
</tr>
<tr>
<td>other asphalt</td>
<td>40.00</td>
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</tbody>
</table>

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 one hundred (100) tons per twelve (12) consecutive month period, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, and shall render the source minor under Section 112 of the Clean Air Act.

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1).

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

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This source was constructed after December 13, 1985 and has potential fugitive particulate emissions of twenty-five (25) tons per year or more. Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the Fugitive Dust Control Plan that is included as Attachment A to the permit.

326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
Pursuant to 326 IAC 6.5-1-1(a), this source (located in Washington County) is not subject to the requirements of 326 IAC 6.5 because it is not located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 6.8 (Particulate Matter Limitations for Lake County)
Pursuant to 326 IAC 6.8-1-1(a), this source (located in Washington County) is not subject to the requirements of 326 IAC 6.8 because it is not located in Lake County.

326 IAC 6.8 (Lake County: Fugitive Particulate Matter)
Pursuant to 326 IAC 6.8-10-1, this source (located in Washington County) is not subject to the requirements of 326 IAC 6.8-10 because it is not located in Lake County.

State rule applicability has been reviewed as follows:

**Dryer/Mixer**

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(c)(5), the dryer/mixer is not subject to the requirements of 326 IAC 6-3, since the source is subject to a more stringent particulate limitation in 40 CFR 60, Subpart I.

326 IAC 7-1.1 Sulfur Dioxide Emission Limitations
This emission unit is not subject to 326 IAC 326 IAC 7-1.1 because it has a potential to emit (or limited potential to emit) sulfur dioxide (SO2) of less than 25 tons per year or 10 pounds per hour.
326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Even though, this unit was constructed after January 1, 1980, it is not subject to the requirements of 326 IAC 8-1-6 because its unlimited VOC potential emissions are less than twenty-five (25) tons per year.

326 IAC 9-1 (Carbon Monoxide Emission Limits)
The requirements of 326 IAC 9-1 do not apply to the dryer/mixer, because this source does not operate a catalyst regeneration petroleum cracking system or a petroleum fluid coker, grey iron cupola, blast furnace, basic oxygen steel furnace, or other ferrous metal smelting equipment.

326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Categories)
The requirements of 326 IAC 10-3 do not apply to the dryer/mixer, since this unit is not a blast furnace, gas-fired boiler, a Portland cement kiln, or a facility specifically listed under 326 IAC 10-3-1(a)(2).

Cold Mix

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The cold mix operation is not subject to the requirements of 326 IAC 8-1-6 because it is regulated by other rules in 326 IAC 8. The unit is subject to the requirements of 326 IAC 8-5-2 (Miscellaneous operations: Asphalt Paving).

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

1. penetrating prime coating;
2. stockpile storage;
3. application during the months of November, December, January, February and March.

Hot Oil Heater

326 IAC 6-2-3 (Particulate Matter Emission Limitations for Sources of Indirect Heating)
Pursuant to 326 IAC 6-2-1(c), for indirect heating facilities existing and in operation, or received permit to construct, prior to September 21, 1983 and not located in Lake, Porter, Marion, Boone, Hamilton, Hendricks, Johnson, Morgan, Shelby, or Hancock Counties are subject to the requirements of 326 IAC 6-2-3.

The particulate matter emissions (Pt) shall be limited by the following equation:

\[
Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}
\]

Where:

- \(Pt\) = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu).
- \(Q\) = Total source maximum operating capacity rating in MMBtu/hr heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility’s permit application, except when some lower capacity is contained in the facility’s operation permit; in which case, the capacity specified in the operation permit shall be used.
Maximum ground level concentration with respect to distance from the point source at the "critical" wind speed for level terrain. This shall equal fifty (50) micrograms per cubic meter for a period not to exceed a sixty (60) minute time period.

Plume rise factor which is used to make allowance for less than theoretical plume rise. The value sixty-seven tenths (0.67) shall be used for Q less than or equal to one thousand (1,000) million British thermal units per hour heat input.

Number of stacks in fuel burning operation.

Stack height in feet. If a number of stacks of different heights exist, the average stack height to represent stacks shall be calculated by weighing each stack height with its particulate matter emission rate as follows:

\[ h = \frac{\sum_{i=1}^{N} H_i \times p_{ai} \times Q}{\sum_{i=1}^{N} p_{ai} \times Q} \]

Where:

- \( H_i \) = height of facility i stack, ft.
- \( p_{ai} \) = actual controlled emission rate of facility i, (lb/MMBtu), using an emission factor from AP-42 or stack test data. Stacks constructed after January 1, 1971, shall be credited with GEP stack height only. GEP stack height shall be calculated as specified in 326 IAC 1-7.
- \( Q \) = Heat input capacity of facility i, MMBtu/hr

<table>
<thead>
<tr>
<th>Facility</th>
<th>Construction Date (Removal Date)</th>
<th>Operating Capacity (MMBtu/hr)</th>
<th>( Q ) (MMBtu/hr)</th>
<th>Calculated Pt (lb/MMBtu)</th>
<th>Particulate Limitation, (Pt) (lb/MMBtu)</th>
<th>PM PTE based on AP-42 (lb/MMBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler 5</td>
<td>1979</td>
<td>2.0</td>
<td>2.0</td>
<td>5.21</td>
<td>0.60</td>
<td>0.002</td>
</tr>
</tbody>
</table>

The calculated values for Pt are based on state the document used as the source of this emission information.

Where: \( Q \) = Sum of the maximum operating capacity rating (MMBtu/hr) of the new unit(s) and all units located at the source on the date the new unit(s) was constructed.

Note: Emission units shown in strikethrough were subsequently removed from the source. The effect of removing these units on "Q" is shown in the year the boiler was removed.

Pursuant to 326 IAC 6-2-3(e), for any unit which has a rating of 250 MMBtu/hr or less, and began operation after June 8, 1972, Pt shall not exceed 0.6 lb/MMBtu. The hot oil heater is capable of complying with this limit without the use of an add on control device.

Storage Tanks

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The No. 2 fuel oil storage tank is not subject to the requirements of 326 IAC 8-1-6, since the potential unlimited VOC emissions is less than twenty-five (25) tons per year.

326 IAC 8-4-3 Petroleum Liquid Storage Facilities
The requirements of 326 IAC 8-4-3 are not applicable because the source does not have petroleum liquid storage vessels with capacities greater than thirty-nine thousand (39,000) gallons containing volatile organic compounds whose true vapor pressure is greater than 10.5 kPa.
326 IAC 8-9-4 Standards for Volatile Organic Liquid Storage Vessels
The requirements of 326 IAC 8-9-4 are not applicable to the liquid asphalt storage tanks because the source is not located in Clark, Floyd, Lake or Porter County.

Material Handling/Conveying

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(c)(5), the material handling process is not subject to the requirements of 326 IAC 6-3, since it is subject to a more stringent limitation in 40 CFR 60, Subpart I, incorporated by reference as 326 IAC 12.

Compliance Determination and Monitoring Requirements

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

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

(a) The Compliance Determination Requirements applicable to this source are as follows:

Testing Requirements:

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Control Device</th>
<th>Timeframe for Testing or Date of Initial Valid Demonstration</th>
<th>Pollutant/Parameter</th>
<th>Frequency of Testing</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dryer/Mixer</td>
<td>Baghouse (CE 3238)</td>
<td>Oct 2015</td>
<td>PM, PM10, PM2.5</td>
<td>Every five (5) years</td>
<td>326 IAC 2-2, 40 CFR 60, Subpart I</td>
</tr>
</tbody>
</table>

(b) The Compliance Monitoring Requirements applicable to this source are as follows:

<table>
<thead>
<tr>
<th>Control Device or Emission Unit</th>
<th>Type of Parametric Monitoring</th>
<th>Frequency</th>
<th>Range or Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baghouse for Dryer/Mixer stack (ST3238)</td>
<td>Pressure Drop</td>
<td>Daily</td>
<td>Within normal range of 3.0 to 6.0 inches of water, unless a different upper or lower value is established in the most recent compliant stack test</td>
</tr>
</tbody>
</table>
These monitoring conditions are necessary because the baghouse for the dryer/mixer must operate properly to assure compliance with 40 CFR 60, Subpart I, 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permit Program) not applicable.

**Proposed Changes**

As part of this permit approval, the permit may contain new or different permit conditions and some conditions from previously issued permits/approvals may have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes.

The following changes were made to conditions contained previously issued permits/approvals (these changes may include Title I changes):

1. PM PSD minor limits and PM10 FESOP limits for the dryer/mixer have been updated.
2. VOC limits for the dryer/mixer have been removed, since the uncontrolled VOC PTE is less than 100 tons per year, and therefore no limit is needed.

**Conclusion and Recommendation**

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on February 19, 2019.

The operation of this stationary hot mix asphalt production plant shall be subject to the conditions of the attached proposed FESOP Renewal No. 175-41089-00028.

The staff recommends to the Commissioner that the FESOP Renewal be approved.

**IDEM Contact**

(a) If you have any questions regarding this permit, please contact Taylor Wade, 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) 233-0868 or (800) 451-6027, and ask for Taylor Wade or (317) 233-0868.

(b) A copy of the findings is available on the Internet at: [http://www.in.gov/ai/appfiles/idem-caats/](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 Air Permits page on the Internet at: [http://www.in.gov/idem/airquality/2356.htm](http://www.in.gov/idem/airquality/2356.htm); and the Citizens' Guide to IDEM on the Internet at: [http://www.in.gov/idem/6900.htm](http://www.in.gov/idem/6900.htm).
### Appendix A.1: Unlimited Emissions Calculations

#### Entire Source - Batch Mix

**Company Name:** Temple and Temple Excavating, Inc.

**Source Address:** 114 Tarr Avenue, Salem, IN 47167

**Permit Number:** F175-41089-00028

**Reviewer:** Taylor Wade

#### Asphalt Plant Maximum Capacity - Batch Mix

- **Maximum Hourly Asphalt Production:** 165 ton/hr
- **Maximum Annual Asphalt Production:** 1,445,400 ton/yr
- **Maximum Annual Blast Furnace Slag Usage:** 0 ton/yr with 1.5% sulfur
- **Maximum Annual Steel Slag Usage:** 0 ton/yr with 0.66% sulfur
- **Maximum Dryer Fuel Input Rate:** 85.0 MMBtu/hr
- **Natural Gas Usage:** 745 MMCF/yr
- **No. 2 Fuel Oil Usage:** 0 gal/yr with 0.50% sulfur
- **No. 4 Fuel Oil Usage:** 0 gal/yr with 0.50% sulfur
- **Residual (No. 5 or No. 6) Fuel Oil Usage:** 0 gal/yr with 0.50% sulfur
- **Propane Usage:** 0 gal/yr with 0.20 gr/100 ft³ sulfur
- **Butane Usage:** 0 gal/yr with 0.22 gr/100 ft³ sulfur
- **Used/Waste Oil Usage:** 0 gal/yr with 1.00% sulfur, 0.50% ash, 0.20% chlorine, and 0.01% lead
- **Diesel Fuel Usage - Generator < 600 HP:** 0 gal/yr with 0.50% sulfur
- **Diesel Fuel Usage - Generator > 600 HP:** 0 gal/yr with 0.50% sulfur

#### Unlimited PM Dryer/Mixer Emission Factor
- **Unlimited PM Dryer/Mixer Emission Factor:** 32.0 lb/ton of asphalt production

#### Unlimited PM10 Dryer/Mixer Emission Factor
- **Unlimited PM10 Dryer/Mixer Emission Factor:** 4.5 lb/ton of asphalt production

#### Unlimited PM2.5 Dryer/Mixer Emission Factor
- **Unlimited PM2.5 Dryer/Mixer Emission Factor:** 0.27 lb/ton of asphalt production

#### Unlimited VOC Dryer/Mixer Emission Factor
- **Unlimited VOC Dryer/Mixer Emission Factor:** 0.008 lb/ton of asphalt production

#### Unlimited CO Dryer/Mixer Emission Factor
- **Unlimited CO Dryer/Mixer Emission Factor:** 0.4 lb/ton of asphalt production

#### Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor
- **Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor:** 0.74 lb/ton of slag processed

#### Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor
- **Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor:** 0.002 lb/ton of slag processed

#### Unlimited/Uncontrolled Emissions

### Uncontrolled Potential to Emit

<table>
<thead>
<tr>
<th>Criteria Pollutants</th>
<th>Greenhouse Gas Pollutants</th>
<th>Hazardous Air Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>PM10</td>
<td>PM2.5</td>
</tr>
<tr>
<td>Ducted Emissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dryer Fuel Combustion (worst case)</td>
<td>2.83</td>
<td>2.83</td>
</tr>
<tr>
<td>Dryer/Mixer and Batch Tower (Process)</td>
<td>23,126.40</td>
<td>195.13</td>
</tr>
<tr>
<td>Dryer/Mixer Slag Processing (worst case)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hot Oil Heater Fuel Combustion/Process (worst case)</td>
<td>0.02</td>
<td>0.07</td>
</tr>
</tbody>
</table>

#### Worst Case Emissions
- **Worst Case Emissions:** 23,126.42 ton/yr

#### Fugitive Emissions

<table>
<thead>
<tr>
<th>Process Description</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>CO₂e</th>
<th>Total HAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Load-Out, Site Filing, On-Site Yard</td>
<td>0.80</td>
<td>0.80</td>
<td>0.80</td>
<td>0</td>
<td>0</td>
<td>12.38</td>
<td>2.08</td>
<td>0</td>
<td>0.21</td>
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<tr>
<td>Material Storages, Processing and Handling</td>
<td>0.34</td>
<td>0.19</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Material Crushing, Screening, and Conveying</td>
<td>2.89</td>
<td>2.89</td>
<td>2.89</td>
<td>2.89</td>
<td>2.89</td>
<td>2.89</td>
<td>2.89</td>
<td>2.89</td>
<td>2.89</td>
</tr>
<tr>
<td>Unpaved and Paved Roads (worst case)</td>
<td>59.95</td>
<td>15.98</td>
<td>1.80</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cold Mix Asphalt Production</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17,370.00</td>
<td>0</td>
<td>0</td>
<td>4,530.76</td>
</tr>
<tr>
<td>Gasoline Fuel Transfer and Dispensing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Organic Liquid Storage Vessels</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Total Fugitive Emissions
- **Total Fugitive Emissions:** 67.82 ton/yr

#### Totals Unlimited/Uncontrolled PTE
- **Totals Unlimited/Uncontrolled PTE:** 23,194.24 ton/yr

---

*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**

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

<table>
<thead>
<tr>
<th>Maximum Fuel Input Rate</th>
<th>Btu/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>85</td>
</tr>
<tr>
<td>No. 2 Fuel Oil</td>
<td>725</td>
</tr>
<tr>
<td>No. 4 Fuel Oil</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td></td>
</tr>
<tr>
<td>Used/Waste Oil</td>
<td></td>
</tr>
</tbody>
</table>

### Unlimited/Uncontrolled Emissions

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>No. 4 Fuel Oil</th>
<th>Propane</th>
<th>Butane</th>
<th>Used/Waste Oil</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>No. 4 Fuel Oil</th>
<th>Propane</th>
<th>Butane</th>
<th>Used/Waste Oil</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(MMCF/yr)</td>
<td>(Bbl/yr)</td>
<td>(Bbl/yr)</td>
<td>(Bbl/yr)</td>
<td>(Bbl/yr)</td>
<td>(tons/yr)</td>
<td>(tons/yr)</td>
<td>(tons/yr)</td>
<td>(tons/yr)</td>
<td>(tons/yr)</td>
<td>(tons/yr)</td>
<td>(tons/yr)</td>
</tr>
<tr>
<td>PM</td>
<td>1.7</td>
<td>2.0</td>
<td>2.0</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
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<td>0.00</td>
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</tr>
<tr>
<td>HC10/PM2.5</td>
<td>7.6</td>
<td>3.3</td>
<td>3.3</td>
<td>1.1</td>
<td>1.1</td>
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<td>SO2</td>
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</tr>
<tr>
<td>NOx</td>
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<td>0.5</td>
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<tr>
<td>CO</td>
<td>94</td>
<td>5.0</td>
<td>5.0</td>
<td>0.3</td>
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<td>0.3</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Methodology

All calculations are based on the assumption that all fuels are burned at the maximum input rate and all emissions are vented to the atmosphere. The emissions are calculated using emission factors from AP-42, Chapter 1.1 (dated 5/98), Tables 1.1-1, 1.1-2, 1.1-3, 1.1-4, and 1.1-5.

*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

Greenhouse Gas (CO2e) Emissions from the Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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 = 85 MMBtu/hr
Natural Gas Usage = 745 MMCF/yr
No. 2 Fuel Oil Usage = 0 gal/yr, and 0.52 % sulfur
No. 4 Fuel Oil Usage = 0 gal/yr, and 0.52 % sulfur
Residual (No. 5 or No. 6) Fuel Oil Usage = 0 gal/yr, and 0.52 % sulfur
Propane Usage = 0 gal/yr, and 0.20 gr/100 ft³ sulfur
Butane Usage = 0 gal/yr, and 0.22 gr/100 ft³ sulfur
Used/Waste Oil Usage = 0 gal/yr, and 1.00 % sulfur 0.50 % ash 0.200 % chlorine, 0.010 % lead

Unlimited/Uncontrolled Emissions

<table>
<thead>
<tr>
<th>CO2e Fraction</th>
<th>Natural Gas (lb/MMCF)</th>
<th>No. 2 Fuel Oil (lb/kgal)</th>
<th>No. 4 Fuel Oil (lb/kgal)</th>
<th>Propane (lb/kgal)</th>
<th>Butane (lb/kgal)</th>
<th>Used/Waste Oil (lb/kgal)</th>
<th>Name</th>
<th>Chemical Formula</th>
<th>Global warming potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>120.161.84</td>
<td>22.901.41</td>
<td>24.133.48</td>
<td>24.835.04</td>
<td>12.500.00</td>
<td>14.506.73</td>
<td>Carbon dioxide</td>
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<tr>
<td>CH4</td>
<td>2.49</td>
<td>0.91</td>
<td>0.97</td>
<td>1.00</td>
<td>0.60</td>
<td>0.67</td>
<td>Methane</td>
<td>CH4</td>
<td>25</td>
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<tr>
<td>N2O</td>
<td>2.2</td>
<td>0.26</td>
<td>0.19</td>
<td>0.53</td>
<td>0.9</td>
<td>0.6</td>
<td>Nitrous oxide</td>
<td>N2O</td>
<td>298</td>
</tr>
</tbody>
</table>

Unlimited/Uncontrolled Potential to Emit (tons/yr)

<table>
<thead>
<tr>
<th>CO2e Fraction</th>
<th>Natural Gas (tons/yr)</th>
<th>No. 2 Fuel Oil (tons/yr)</th>
<th>No. 4 Fuel Oil (tons/yr)</th>
<th>Propane (tons/yr)</th>
<th>Butane (tons/yr)</th>
<th>Used/Waste Oil (tons/yr)</th>
<th>CO2e for Worst Case Fuel* (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>44.738.25</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>45,003.54</td>
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<tr>
<td>CH4</td>
<td>0.93</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<td>N2O</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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</tr>
<tr>
<td>Total</td>
<td>44.738.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>45,003.54</td>
</tr>
</tbody>
</table>

CO2e Equivalent Emissions (tons/yr) 45,003.54

Methodology

Fuel Usage from TSD Appendix A.1, page 1 of 14.

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0915 MMBtu]
Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.102 MMBtu]

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

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

Sources of Emission Factors for fuel combustion. (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

CO2: Carbon Dioxide
CH4 = Methane
N2O = Nitrogen Dioxide

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

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

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

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

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

Fuel Oils: EF (lb/kgal) = [Emission Factor (lb/MMCF)] * [Conversion Factor (2,204.62 kg/MMCF)]

Emission Factors (EF) Conversions

Natural Gas: EF (lb/MMCF) = EF (kg/MMBtu/yr) * Conversion Factor (2,204.62 kg/MMCF) * Heating Value of Natural Gas [MMBtu/scf] * Conversion Factor (1,000,000 scf/MMCF)

Fuel Oils: EF (lb/kgal) = EF (kg/MMBtu/yr) * Conversion Factor (2,204.62 kg/MMCF) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)

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

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gal/yr)] * [Emission Factor (lb/kgal)] * [Conversion Factor (2,204.62 kg/MMCF)]

Emission Factor for CO2 of "worst case" fuel (lb/kgal) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (25) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (298).
Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer and Batch Tower - Process Emissions

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

Maximum Hourly Asphalt Production = 165 ton/hr
Maximum Annual Asphalt Production = 1,445,400 ton/yr

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
<th>Worse Case</th>
</tr>
</thead>
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<td>0</td>
<td>3252.15</td>
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<td>PM2.5</td>
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<td>0</td>
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<td>0</td>
<td>195.1</td>
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<tr>
<td>SO2**</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>NOx**</td>
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<td>0</td>
<td>18.1</td>
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<td>VOC**</td>
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<tr>
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<td>289.1</td>
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<td>289.1</td>
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</table>

Hazardous Air Pollutant

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<th></th>
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<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
<th>Worse Case</th>
</tr>
</thead>
<tbody>
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<td>Arsenic</td>
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<td>0.00E+00</td>
<td>3.32E-04</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>3.32E-04</td>
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<tr>
<td>Beryllium</td>
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<td>0.00E+00</td>
<td>1.08E-04</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>1.08E-04</td>
</tr>
<tr>
<td>Chromium</td>
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<td>0.00E+00</td>
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<td>0.00E+00</td>
<td>0.00E+00</td>
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</tr>
<tr>
<td>Lead</td>
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<td>0.00E+00</td>
<td>4.96E-03</td>
</tr>
<tr>
<td>Mercury</td>
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<td>0.00E+00</td>
<td>0.00E+00</td>
<td>2.96E-04</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>2.96E-04</td>
</tr>
<tr>
<td>Nickel</td>
<td>3.00E-06</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>2.17E-03</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>2.17E-03</td>
</tr>
<tr>
<td>Selenium</td>
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<td>0.00E+00</td>
<td>3.54E-04</td>
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<tr>
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<td>0.00</td>
<td>0.00</td>
<td>0.23</td>
</tr>
<tr>
<td>Benzene</td>
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<td>0.00E+00</td>
<td>0.20</td>
<td>0.00</td>
<td>0.00</td>
<td>0.20</td>
</tr>
<tr>
<td>Ethylbenzene</td>
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<td>0.00E+00</td>
<td>1.59</td>
<td>0.00</td>
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<tr>
<td>Formaldehyde</td>
<td>7.42E-04</td>
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<td>0.00E+00</td>
<td>0.53</td>
<td>0.00</td>
<td>0.00</td>
<td>0.53</td>
</tr>
<tr>
<td>Guaiacol</td>
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<td>0.00</td>
<td>0.20</td>
</tr>
<tr>
<td>Toluene</td>
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<td>Total PAH Haps</td>
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<td>0.00E+00</td>
<td>0.08</td>
<td>0.00</td>
<td>0.00</td>
<td>0.08</td>
</tr>
<tr>
<td>Xylene</td>
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<td>0.00E+00</td>
<td>1.95</td>
<td>0.00</td>
<td>0.00</td>
<td>1.95</td>
</tr>
</tbody>
</table>

Total HAPs 5.52

Methodology

**Worst Single HAP** 1.95 (formaldehyde)

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


* 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  
VOC = Volatile Organic Compounds  
NOx = Nitrous Oxides  
PAH = Polynuclear Aromatic Hydrocarbons  
HAP = Hazardous Air Pollutant  
PM10 = Particulate Matter (<10 um)  
PM2.5 = Particulate Matter (< 2.5 um)  
HCl = Hydrogen Chloride
Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO2e) Emissions from the Batch-Mix Plant (Dryer/Mixer) Process Emissions

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

Maximum Hourly Asphalt Production = 165 ton/hr
Maximum Annual Asphalt Production = 1,445,400 ton/yr

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
<th>Global Warming Potentials (GWP)</th>
<th>Unlimited/Uncontrolled Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>1</td>
<td>26,739.90</td>
</tr>
<tr>
<td>CH4</td>
<td>0.0074</td>
<td>0.0074</td>
<td>0.0074</td>
<td>25</td>
<td>5.35</td>
</tr>
<tr>
<td>N2O</td>
<td></td>
<td></td>
<td></td>
<td>298</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26,745.25</td>
</tr>
</tbody>
</table>

CO2e Equivalent Emissions (tons/yr) = 26,873.60

**Methodology**

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

Unlimited Potential to Emit CO2e (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

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

**Abbreviations**

CO2 = Carbon Dioxide  
CH4 = Methane  
N2O = Nitrogen Dioxide  
PTE = Potential to Emit
Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Slag Processing

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41098-00028
Reviewer: Taylor Wade

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

Maximum Annual Blast Furnace Slag Usage = 0 ton/yr 1.5 % sulfur
Maximum Annual Steel Slag Usage = 0 ton/yr 0.66 % sulfur

<table>
<thead>
<tr>
<th>Type of Slag</th>
<th>SO2 Emission Factor (lb/ton)</th>
<th>Unlimited Potential to Emit SO2 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blast Furnace Slag*</td>
<td>0.74</td>
<td>0.0</td>
</tr>
<tr>
<td>Steel Slag**</td>
<td>0.0014</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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 #127-27075-05214), 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: Temple and Temple Excavating, Inc.
Source Location: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr
Natural Gas Usage = 18 MMCF/yr
No. 2 Fuel Oil Usage = 0 gal/yr, and 0.50 % sulfur

<table>
<thead>
<tr>
<th>Unlimited/Uncontrolled Emissions</th>
<th>Emission Factor (units)</th>
<th>Unlimited/Uncontrolled Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural Gas (lb/MMCF)</td>
<td>Natural Gas (tons/yr) พิมพ์ในภาษาไทย</td>
</tr>
<tr>
<td></td>
<td>No. 2 Fuel Oil (lb/kgal)</td>
<td>No. 2 Fuel Oil (tons/yr) พิมพ์ในภาษาไทย</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worse Case</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fuel (tons/yr) พิมพ์ในภาษาไทย</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>PM10/PM2.5</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
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<td>0.6</td>
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<td>0.0</td>
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<table>
<thead>
<tr>
<th>Hazardous Air Pollutant</th>
</tr>
</thead>
<tbody>
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<td>Arsene</td>
</tr>
<tr>
<td>Beryllium</td>
</tr>
<tr>
<td>Cadmium</td>
</tr>
<tr>
<td>Chromium</td>
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<td>Cobalt</td>
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<td>Silicon</td>
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<td>Ethylbenzene</td>
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<td>Hexane</td>
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<td>Phenol</td>
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<td>Toluene</td>
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<tr>
<td>Total PAH Haze</td>
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<td>Total Polyaromatic Matter</td>
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</table>

<table>
<thead>
<tr>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor (lb/MMCF) = Maximum Fuel Input Rate (MMBtu/hr) * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]</td>
</tr>
<tr>
<td>Equivalent Oil Usage (gal/yr) = Maximum Fuel Input Rate (MMBtu/hr) * [8,760 hrs/yr] * [1 gal/140 MMBtu]</td>
</tr>
<tr>
<td>Maximum Natural Gas Usage (MMCF/yr) = [Emission Factor (lb/MMCF)] * [ton/2000 lbs]</td>
</tr>
<tr>
<td>All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Emission Factor (lb/kgal)] * [kgal/1,000 gal] * [ton/2000 lbs]</td>
</tr>
</tbody>
</table>

Sources of AP-42 Emission Factors for fuel combustion:
- Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

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

<table>
<thead>
<tr>
<th>Worst Single HAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Hexane)</td>
</tr>
</tbody>
</table>

**Unlimited/Uncontrolled Potential to Emit (tons/yr):**

- **PM10/PM2.5:** 0.000
- **SO2:** 0.000
- **NOx:** 0.000
- **VOC:** 0.000
- **CO:** 0.000

**Total HAPs:** 0.000

**Total PAHs:** 0.000

**Total HAPs:** 0.000

**Worst Single HAP:** 0.000

**Hexane:** 0.000
### Unlimited/Uncontrolled Emissions

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Emission Factor (units)</th>
<th>Global Warming Potentials (GWP)</th>
<th>Unlimited/Uncontrolled Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural Gas (lb/MMCF)</td>
<td>No. 2 Fuel Oil (lb/kgal)</td>
<td>Natural Gas (tons/yr)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No. 2 Fuel Oil (tons/yr)</td>
</tr>
<tr>
<td>CO2</td>
<td>120.161.84</td>
<td>22.501.41</td>
<td>1</td>
</tr>
<tr>
<td>CH4</td>
<td>2.49</td>
<td>0.91</td>
<td>25</td>
</tr>
<tr>
<td>N2O</td>
<td>2.2</td>
<td>0.26</td>
<td>296</td>
</tr>
</tbody>
</table>

**Worse Case CO2e Emissions (tons/yr)** 1,058.91

**CO2e Equivalent Emissions (tons/yr)** 1,058.91 0.00

### Methodology

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

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

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

**Emission Factors for fuel combustion:** (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

- **Natural Gas:** Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2
- **No. 2 Fuel Oil:** Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

**Emission Factor (EF) Conversions**

- **Natural Gas:** EF (lb/MMCF) = \[EF (kg/MMBtu) \times Conversion Factor (2.20462 lbs/kg) \times Heating Value of Natural Gas (MMBtu/scf) \times Conversion Factor (1,000,000 scf/MMCF)\]
- **Fuel Oils:** EF (lb/kgal) = \[EF (kg/MMBtu) \times Conversion Factor (2.20462 lbs/kg) \times Heating Value of the Fuel Oil (MMBtu/gal) \times Conversion Factor (1000 gal/kgal)\]

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

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

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

**Abbreviations**

- CO2 = Carbon Dioxide
- CH4 = Methane
- N2O = Nitrogen Dioxide
- PTE = Potential to Emit
Appendix A.1: Unlimited Emissions Calculations
Hot Oil Heating System - Process Emissions

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

Maximum Fuel Input Rate To Hot Oil Heater = 2.00 MMBtu/hr
Natural Gas Usage = 17.52 MMCF/yr, and
No. 2 Fuel Oil Usage = 0.00 gal/yr

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas (lb/CF)</th>
<th>No. 2 Fuel Oil (lb/gal)</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Unlimited/Uncontrolled Potential to Emit (tons/yr)</th>
<th>Worse Case</th>
<th>PTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>2.60E-08</td>
<td>2.65E-05</td>
<td>2.28E-04</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>8.90E-06</td>
<td>0.0012</td>
<td>0.078</td>
<td>0.00</td>
<td>0.078</td>
<td>0.078</td>
<td></td>
</tr>
<tr>
<td>Greenhouse Gas as CO2e*</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>CO2</td>
<td>0.20</td>
<td>28.00</td>
<td>1752.00</td>
<td>0.00</td>
<td>1752.00</td>
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<td></td>
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<tr>
<td>Hazardous Air Pollutant</td>
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<td></td>
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<td></td>
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<tr>
<td>Formaldehyde</td>
<td>2.60E-08</td>
<td>3.50E-06</td>
<td>2.28E-04</td>
<td>0.00E+00</td>
<td>2.28E-04</td>
<td>2.28E-04</td>
<td></td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>5.30E-07</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>2.00E-07</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Anthracene</td>
<td>1.80E-07</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Benzo(b)fluoranthene</td>
<td>1.00E-07</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Fluoranthene</td>
<td>4.40E-08</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Fluorene</td>
<td>3.20E-08</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>1.70E-05</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>4.90E-06</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
<tr>
<td>Pyrene</td>
<td>3.20E-08</td>
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<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td></td>
</tr>
</tbody>
</table>

Total HAPs 2.28E-04
Worst Single HAP 2.28E-04 (Naphthalene)

Methodology
Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr) * \[8,760 \text{ hrs/yr}\] * [1 MMCF/1,000 MMBtu]
No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr) * \[8,760 \text{ hrs/yr}\] * [1 gal/0.140 MMBtu]
Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)
No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

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

Abbreviations
CO = Carbon Monoxide
VOC = Volatile Organic Compound
CO2 = Carbon Dioxide
Appendix A.1: Unlimited Emissions Calculations

Asphalt Load-Out, Silo Filling, and Yard Emissions

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

Asphalt Temperature, T = 325°F
Asphalt Volatility Factor, V = -0.5
Maximum Annual Asphalt Production = 1,445,400 tons/yr

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.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Load-Out SILO Filling On-Site Yard</th>
<th>Load-Out SILO Filling On-Site Yard</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PM*</td>
<td>5.2E-04 5.9E-04</td>
<td>NA 0.38 0.42</td>
<td>0.80</td>
</tr>
<tr>
<td>Organic PM</td>
<td>3.4E-04 2.5E-04</td>
<td>NA 0.25 0.183</td>
<td>0.43</td>
</tr>
<tr>
<td>TOC</td>
<td>0.004 0.012 0.001</td>
<td>3.01 8.81 0.795</td>
<td>12.8</td>
</tr>
<tr>
<td>CO</td>
<td>0.001 0.001 3.5E-04</td>
<td>0.98 0.853 0.254</td>
<td>2.08</td>
</tr>
</tbody>
</table>

*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

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)


Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14):

Total PM = 0.000181 + 0.00141(-V)e^((0.0251)(T+460)-20.43)
Organic PM = 0.00141(-V)e^((0.0251)(T+460)-20.43)
TOC = 0.0172(-V)e^((0.0251)(T+460)-20.43)
CO = 0.00558(-V)e^((0.0251)(T+460)-20.43)

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

Total PM = 0.000332 + 0.00105(-V)e^((0.0251)(T+460)-20.43)
Organic PM = 0.00105(-V)e^((0.0251)(T+460)-20.43)
TOC = 0.0504(-V)e^((0.0251)(T+460)-20.43)
CO = 0.00488(-V)e^((0.0251)(T+460)-20.43)

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

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:**
Temple and Temple Excavating, Inc.

**Source Address:**
114 Tarr Avenue, Salem, IN 47167

**Permit Number:**
F175-41089-00028

**Reviewer:**
Taylor Wade

### Organic Particulate-Based Compounds (Table 11.1-15)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CASRN</th>
<th>Category</th>
<th>HAP Type</th>
<th>Source</th>
<th>Speciation Profile (Load-out and Onsite Yard (% by weight of Total Organic PM))</th>
<th>Unlimited/Uncontrolled Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PAH HAPs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>83-32-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.26% 0.47%</td>
<td>6.4E-04 8.6E-04 NA 1.5E-03</td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>208-96-8</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.028% 0.014%</td>
<td>6.9E-05 2.6E-05 NA 9.5E-05</td>
</tr>
<tr>
<td>Anthracene</td>
<td>120-12-7</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.07% 0.13%</td>
<td>1.7E-04 2.4E-04 NA 4.1E-04</td>
</tr>
<tr>
<td>Benzo(a)anthracene</td>
<td>56-55-3</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.019% 0.056%</td>
<td>4.7E-05 1.0E-04 NA 1.5E-04</td>
</tr>
<tr>
<td>Benzo(b)fluoranthene</td>
<td>205-99-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0076% 0</td>
<td>1.9E-05 0 NA 1.9E-05</td>
</tr>
<tr>
<td>Benzo(k)fluoranthene</td>
<td>207-08-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0022% 0</td>
<td>5.4E-06 0 NA 5.4E-06</td>
</tr>
<tr>
<td>Benzo(g,h,i)perylene</td>
<td>191-24-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0019% 0</td>
<td>4.7E-06 0 NA 4.7E-06</td>
</tr>
<tr>
<td>Benzo(a)pyrene</td>
<td>50-32-8</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0023% 0</td>
<td>5.7E-06 0 NA 5.7E-06</td>
</tr>
<tr>
<td>Benzo(e)pyrene</td>
<td>192-97-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0078% 0.0096%</td>
<td>1.9E-05 1.7E-05 NA 3.7E-05</td>
</tr>
<tr>
<td>Chrysene</td>
<td>218-01-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.103% 0.21%</td>
<td>2.5E-04 3.9E-04 NA 6.4E-04</td>
</tr>
<tr>
<td>Dibenzo(a,h)anthracene</td>
<td>53-70-3</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.00037% 0</td>
<td>9.1E-07 0 NA 9.1E-07</td>
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<tr>
<td>Fluorene</td>
<td>206-44-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.05% 0.15%</td>
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<tr>
<td>Fluoranthene</td>
<td>86-73-7</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
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<td>Indeno(1,2,3-cd)pyrene</td>
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<td>PM/HAP</td>
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<td>Organic PM</td>
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<tr>
<td>2-Methylnaphthalene</td>
<td>91-57-6</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>2.38% 5.27%</td>
<td>5.9E-03 9.7E-03 NA 0.016</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>1.26% 1.82%</td>
<td>3.1E-03 3.3E-03 NA 6.4E-03</td>
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<tr>
<td>Phenanthrene</td>
<td>198-55-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.022% 0.03%</td>
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<tr>
<td>Phenanthrene</td>
<td>85-01-8</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.81% 1.80%</td>
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<td>Pyrene</td>
<td>129-00-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.15% 0.44%</td>
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<tr>
<td><strong>Total PAH HAPs</strong></td>
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<td>0.015 0.021 NA 0.835</td>
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<td><strong>Other semi-volatile HAPs</strong></td>
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<tr>
<td>Phenol</td>
<td>PM/HAP</td>
<td>—</td>
<td>Organic PM</td>
<td></td>
<td>1.18% 0</td>
<td>2.9E-03 0 0 2.9E-03</td>
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</tbody>
</table>

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

**Methodology**

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]


**Abbreviations**

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter
### Organic Volatile-Based Compounds (Table 11.1-16)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CASRN</th>
<th>Category</th>
<th>HAP Type</th>
<th>Source</th>
<th>Speciation Profile</th>
<th>Unlimited/Uncontrolled Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Load-out and Onsite Yard (% by weight of TOC)</td>
<td>Silo Filling and Asphalt Storage Tank (% by weight of TOC)</td>
<td>Load-out</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>94%</td>
<td>100%</td>
<td>2.83</td>
</tr>
<tr>
<td><strong>VOC</strong></td>
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</tr>
<tr>
<td><strong>non-VOC/non-HAPS</strong></td>
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<tr>
<td>Methane</td>
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<td>non-VOC/non-HAP</td>
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<td>TOC</td>
<td>6.50%</td>
<td>0.26%</td>
</tr>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>non-VOC/non-HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.048%</td>
<td>0.058%</td>
</tr>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
<td>non-VOC/non-HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.71%</td>
<td>1.10%</td>
</tr>
<tr>
<td><strong>Total non-VOC/non-HAPS</strong></td>
<td></td>
<td></td>
<td></td>
<td>7.30%</td>
<td>1.40%</td>
<td>0.219</td>
</tr>
<tr>
<td><strong>Volatile organic HAPs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>VOCHAP</td>
<td>---</td>
<td>TOC</td>
<td>0.052%</td>
<td>0.032%</td>
</tr>
<tr>
<td>Bromomethane</td>
<td>74-83-9</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0096%</td>
<td>0.0049%</td>
</tr>
<tr>
<td>2-Butanone</td>
<td>78-93-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.049%</td>
<td>0.039%</td>
</tr>
<tr>
<td>Carbon Disulfide</td>
<td>75-15-0</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.013%</td>
<td>0.016%</td>
</tr>
<tr>
<td>Chloroethane</td>
<td>75-00-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.00212%</td>
<td>0.004%</td>
</tr>
<tr>
<td>Chloromethane</td>
<td>74-87-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.015%</td>
<td>0.023%</td>
</tr>
<tr>
<td>Cumene</td>
<td>92-82-8</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.11%</td>
<td>0</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.28%</td>
<td>0.038%</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.089%</td>
<td>0.09%</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>100-54-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.15%</td>
<td>0.10%</td>
</tr>
<tr>
<td>Isocyanate</td>
<td>540-84-1</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.00188%</td>
<td>0.00031%</td>
</tr>
<tr>
<td>Methylene Chloride</td>
<td>75-09-2</td>
<td>non-VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0.00027%</td>
</tr>
<tr>
<td>MTBE</td>
<td>1634-04-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Styrene</td>
<td>100-42-5</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0073%</td>
<td>0.0054%</td>
</tr>
<tr>
<td>Tetrachloroethene</td>
<td>127-18-4</td>
<td>non-VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0077%</td>
<td>0</td>
</tr>
<tr>
<td>Toluene</td>
<td>100-88-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.21%</td>
<td>0.062%</td>
</tr>
<tr>
<td>1,1,1-Trichloroethene</td>
<td>71-55-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Trichloroethene</td>
<td>79-01-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0013%</td>
<td>0</td>
</tr>
<tr>
<td>Trichlorofluoromethane</td>
<td>75-69-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>m/p-Xylene</td>
<td>1330-20-7</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.41%</td>
<td>0.20%</td>
</tr>
<tr>
<td>o-Xylene</td>
<td>95-47-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.08%</td>
<td>0.057%</td>
</tr>
<tr>
<td><strong>Total volatile organic HAPs</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.50%</td>
<td>1.30%</td>
<td>0.045</td>
</tr>
</tbody>
</table>

**Methodology**

Unlimited/Uncontrolled Potential to Emit (tons/yr) = Speciation Profile (%) * [TOC (tons/yr)]


**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: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

\[
Ef = 1.7 \times \frac{s}{1.5} \times \frac{365-p}{235} \times \frac{f}{15}
\]

where

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

<table>
<thead>
<tr>
<th>Material</th>
<th>Silt Content (wt %)*</th>
<th>Emission Factor (lb/acre/day)</th>
<th>Maximum Anticipated Pile Size (acres)**</th>
<th>PTE of PM (tons/yr)</th>
<th>PTE of PM10/PM2.5 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>2.6</td>
<td>3.01</td>
<td>0.62</td>
<td>0.341</td>
<td>0.119</td>
</tr>
<tr>
<td>Limestone</td>
<td>1.6</td>
<td>1.85</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>RAP</td>
<td>0.5</td>
<td>0.58</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Gravel</td>
<td>1.6</td>
<td>1.85</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Shingles</td>
<td>0.5</td>
<td>0.58</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Slag</td>
<td>3.8</td>
<td>4.40</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>**Totals</td>
<td></td>
<td></td>
<td></td>
<td><strong>0.34</strong></td>
<td><strong>0.12</strong></td>
</tr>
</tbody>
</table>

Note: The source has five aggregate storage piles, consisting of gravel, limestone and sand. Each pile size is 60 feet by 90 feet. It’s assumed that each pile stores sand as a worst case-assumption.

Methodology
PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (365 days/yr)  
PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%  
* Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)  
** Maximum anticipated pile size (acres) provided by the source.

Abbreviations  
RAP - recycled asphalt pavement  
PM = Particulate Matter  
PM10 = Particulate Matter (<10 um)  
PM2.5 = Particulate Matter (<2.5 um)  
PTE = Potential to Emit
Appendix A.1: Unlimited Emissions Calculations
Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

\[
Ef = k \times (0.0032) \times \left( \frac{U}{10} \right)^{1.3} \times \left( \frac{M}{2} \right)^{1.4}
\]
where:
- \( Ef \) = Emission factor (lb/ton)
- \( k \) (PM) = 0.74 = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
- \( k \) (PM10) = 0.35 = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
- \( k \) (PM2.5) = 0.053 = particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
- \( U \) = 10.2 = worst case annual mean wind speed (Source: NOAA, 2006*)
- \( M \) = 4.0 = material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)

\[
\begin{align*}
Ef \ (PM) & = 2.27E-03 \text{ lb PM/ton of material handled} \\
Ef \ (PM10) & = 1.07E-03 \text{ lb PM10/ton of material handled} \\
Ef \ (PM2.5) & = 1.62E-04 \text{ lb PM2.5/ton of material handled}
\end{align*}
\]

Maximum Annual Asphalt Production = 1,445,400 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 1,373,130 tons/yr

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Unlimited/Uncontrolled PTE of PM (tons/yr)</th>
<th>Unlimited/Uncontrolled PTE of PM10 (tons/yr)</th>
<th>Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck unloading of materials into storage piles</td>
<td>1.56</td>
<td>0.74</td>
<td>0.11</td>
</tr>
<tr>
<td>Front-end loader dumping of materials into feeder bins</td>
<td>1.56</td>
<td>0.74</td>
<td>0.11</td>
</tr>
<tr>
<td>Conveyor dropping material into dryer/mixer or batch tower</td>
<td>1.56</td>
<td>0.74</td>
<td>0.11</td>
</tr>
<tr>
<td>Total (tons/yr)</td>
<td>4.67</td>
<td>2.21</td>
<td>0.33</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Uncontrolled Emission Factor for PM (lb/ton)*</th>
<th>Uncontrolled Emission Factor for PM10 (lb/ton)*</th>
<th>Unlimited/Uncontrolled PTE of PM (tons/yr)</th>
<th>Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Screening</td>
<td>0.025</td>
<td>0.0087</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Conveying</td>
<td>0.003</td>
<td>0.0011</td>
<td>2.06</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Unlimited Potential to Emit (tons/yr) = 2.06 + 0.76

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)

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
## 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 (2012).

### Maximum Annual Asphalt Production = 445,400 tons/yr

### Percent Asphalt CementBinder (weight %) = 5.0%

### Maximum Material Handling Throughput = 135,700 tons/yr

### Maximum Asphalt CementBinder Throughput = 12,720 tons/yr

### Maximum No. 2 Fuel Oil Usage = 0 gallons/yr

<table>
<thead>
<tr>
<th>Process</th>
<th>Vehicle Type</th>
<th>Maximum Weight of Vehicle (tons)</th>
<th>Maximum Weight of Load (tons)</th>
<th>Maximum trips per year (trip/yr)</th>
<th>Total Weight driven per year (ton/yr)</th>
<th>Maximum one-way distance (feet/mile)</th>
<th>Maximum one-way distance (metry)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate/RAF Truck Enter Empty</td>
<td>Dumper truck (16 CY)</td>
<td>17.0</td>
<td>1.0</td>
<td>3.18E+04</td>
<td>5.18E+05</td>
<td>0.031</td>
<td>0.057</td>
</tr>
<tr>
<td>Aggregate/RAF Truck Leave Empty</td>
<td>Dumper truck (16 CY)</td>
<td>17.0</td>
<td>1.0</td>
<td>3.18E+04</td>
<td>5.18E+05</td>
<td>0.031</td>
<td>0.057</td>
</tr>
<tr>
<td>Asphalt Concrete Binder Truck Enter Empty</td>
<td>Tarr Summer (6000 gal)</td>
<td>12.0</td>
<td>0.0</td>
<td>2.08E+03</td>
<td>4.16E+04</td>
<td>0.022</td>
<td>0.057</td>
</tr>
<tr>
<td>Asphalt Concrete Binder Truck Leave Empty</td>
<td>Tarr Summer (6000 gal)</td>
<td>12.0</td>
<td>0.0</td>
<td>2.08E+03</td>
<td>4.16E+04</td>
<td>0.022</td>
<td>0.057</td>
</tr>
<tr>
<td>Fuel Oil Truck Enter Empty</td>
<td>Dumper truck (16 CY)</td>
<td>17.0</td>
<td>1.0</td>
<td>3.18E+04</td>
<td>5.18E+05</td>
<td>0.031</td>
<td>0.057</td>
</tr>
<tr>
<td>Fuel Oil Truck Leave Empty</td>
<td>Dumper truck (16 CY)</td>
<td>17.0</td>
<td>1.0</td>
<td>3.18E+04</td>
<td>5.18E+05</td>
<td>0.031</td>
<td>0.057</td>
</tr>
<tr>
<td>Aggregate/RAF Loader Empty</td>
<td>Front-end loader (3 CY)</td>
<td>15.0</td>
<td>0.0</td>
<td>3.38E+05</td>
<td>6.75E+06</td>
<td>0.000</td>
<td>0.057</td>
</tr>
<tr>
<td>Asphalt Concrete Truck Leave Empty</td>
<td>Dumper truck (16 CY)</td>
<td>17.0</td>
<td>1.0</td>
<td>3.18E+04</td>
<td>5.18E+05</td>
<td>0.031</td>
<td>0.057</td>
</tr>
</tbody>
</table>

### Average Vehicle Weight Per Trip = 20.3 tons/trip

### Average Miles Per Trip = 0.057 miles/trip

### Mitigated Emission Factor, $E_{ext}$ = $E * \left(\frac{365 - P}{365}\right)$

### Where $E = \text{Unmitigated Emission Factor, } E_{f}$

### Maximum No. 2 Fuel Oil Usage = 7.7 tons/yr

### Mitigated Emission Factor, $E_{ext}$ = 0.85 $E_{f}$

### Where $P = \text{Maximum one-way miles (miles/yr)}$

### Tons/yr (equivalent to 0.01 inches (see Fig. 13.2.2-1)

### Maximum one-way distance (in feet/mile) = 0.057 miles/trip

### Maximum one-way distance (in metric) = 0.057 miles/trip

### Mitigated PTE of PM10 = Mitigated PTE of PM10 (Before Control) (tons/yr) * (1 - Dust Control Efficiency)

### Mitigated PTE of PM2.5 = Mitigated PTE of PM2.5 (Before Control) (tons/yr) * (1 - Dust Control Efficiency)

### Mitigated PTE of PM = Mitigated PTE of PM (Before Control) (tons/yr) * (1 - Dust Control Efficiency)

### Tons/yr (equivalent to 0.01 inches (see Fig. 13.2.2-1)

### Average  Miles Per Trip = $\sum[\text{Maximum one-way miles (miles/yr)}] / \sum[\text{Maximum trips per year (trip/yr)}]$

### Average Vehicle Weight Per Trip = $\sum[\text{Total Weight driven per year (ton/yr)}] / \sum[\text{Maximum trips per year (trip/yr)}]$

### Tons/yr (equivalent to 0.01 inches (see Fig. 13.2.2-1)

### Maximum one-way distance (miles/yr) = $k \times \left[ \frac{s}{12} \right]^{a} \times \left[ \frac{W}{3} \right]^{b}$

### Equation 1a from AP-42 13.2.2

### Where $k = \text{constant (AP-42 Table 13.2.2-2)}$

### $s = \text{particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)}$

### $W = \text{average vehicle weight (provided by source)}$

### Appendix A.1: Unlimited Emissions Calculations
### Appendix A.1: Unlimited Emissions Calculations

#### Paved Roads

**Source**
- **Company Name:** Temple and Temple Excavating, Inc.
- **Source Address:** 114 Tarr Avenue, Salem, IN 47167
- **Reviewer:** Taylor Wade

#### 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).

#### Methodology

Maximum Material Handling Throughput = Annual Asphalt Production Limitation (tons/yr) * [1 - Percent Asphalt Cement/Binder (weight %)]

Maximum Weight of Load = Maximum Weight of Vehicle and Load (tons/trip) * Maximum trips per year (trips/yr) * Maximum one-way distance (mi/trip) / Average Vehicle Weight Per Trip (ton/trip)

#### Formulas

\[ \text{Mitigated Emission Factor, } E_{\text{ext}} = Ef \times \left(1 - \frac{p}{4N}\right) \]

where:
- \( p \) = Particle size multiplier (AP-42 Table 13.2.1.1)
- \( W \) = Average vehicle weight (provided by source)
- \( S_L \) = Silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3
- \( W \) = Total weight driven per year (ton/yr)
- \( N \) = Maximum trips per year (trip/yr)

#### Calculations

<table>
<thead>
<tr>
<th>Process</th>
<th>Vehicle Type</th>
<th>Maximum Weight of Vehicle (tons)</th>
<th>Maximum Weight of Load (tons)</th>
<th>Maximum Weight of Vehicle and Load (tons/trip)</th>
<th>Maximum trips per year (trips/yr)</th>
<th>Mitigated Emission Factor (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate/Asphalt Truck Enter Empty</td>
<td>Dump truck (16 CY)</td>
<td>17.0</td>
<td>0</td>
<td>17.00</td>
<td>6.1E+04</td>
<td>1.0E+06</td>
</tr>
<tr>
<td>Aggregate/Asphalt Truck Leave Empty</td>
<td>Dump truck (16 CY)</td>
<td>17.0</td>
<td>0</td>
<td>17.00</td>
<td>2.0E+04</td>
<td>2.4E+06</td>
</tr>
<tr>
<td>Aggregate/Asphalt Binder Truck Enter Empty</td>
<td>Tanker truck (6000 gal)</td>
<td>12.0</td>
<td>0</td>
<td>12.00</td>
<td>0.0E+00</td>
<td>0.0E+00</td>
</tr>
<tr>
<td>Aggregate/Asphalt Binder Truck Leave Empty</td>
<td>Tanker truck (6000 gal)</td>
<td>12.0</td>
<td>0</td>
<td>12.00</td>
<td>0.0E+00</td>
<td>0.0E+00</td>
</tr>
<tr>
<td>Aggregate/Asphalt Mixer Empty</td>
<td>Aggregate/RAP Loader (3 CY)</td>
<td>15.89</td>
<td>3.18</td>
<td>0.78</td>
<td>7.95</td>
<td>1.59</td>
</tr>
<tr>
<td>Aggregate/Asphalt Mixer Full</td>
<td>Aggregate/RAP Loader (3 CY)</td>
<td>15.89</td>
<td>3.18</td>
<td>0.78</td>
<td>7.95</td>
<td>1.59</td>
</tr>
<tr>
<td>Aggregate/Asphalt Truck Empty</td>
<td>Tanker truck (6000 gal)</td>
<td>17.0</td>
<td>0</td>
<td>17.00</td>
<td>6.1E+04</td>
<td>1.0E+06</td>
</tr>
<tr>
<td>Aggregate/Asphalt Truck Full</td>
<td>Tanker truck (6000 gal)</td>
<td>17.0</td>
<td>0</td>
<td>17.00</td>
<td>6.1E+04</td>
<td>1.0E+06</td>
</tr>
</tbody>
</table>

#### Totals

\[ \text{Total} = 8.9E+05 \times 1.9E+07 \times 5.1E+04 \]

#### Summary

- **Source Address:** 114 Tarr Avenue, Salem, IN 47167
- **Company Name:** Temple and Temple Excavating, Inc.
- **Reviewer:** Taylor Wade

---

**Notes:**
- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (<2.5 um)
- PTE = Potential to Emit

**Abbreviations**
- TSD = Total State Database
- APP = Ambient Particulate Matter
- RAP = Recycled Asphalt Paving
- PTE = Potential to Emit
- AP-42 = Ambient Particulate Matter
Appendix A.1: Unlimited Emissions Calculations
Cold Mix Asphalt Production and Stockpiles

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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 = 1,445,400 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Asphalt Cement/Binder Throughput = 72,270 tons/yr

### Volatile Organic Compounds

<table>
<thead>
<tr>
<th>Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)</th>
<th>Maximum weight % of VOC solvent in binder</th>
<th>Weight % VOC solvent in binder that evaporates</th>
<th>Maximum VOC Solvent Usage (tons/yr)</th>
<th>PTE of VOC (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25.3%</td>
<td>95.0%</td>
<td>18,284.3</td>
<td>17,370.1</td>
</tr>
<tr>
<td>Cut back asphalt medium cure (assuming kerosene solvent)</td>
<td>28.6%</td>
<td>70.0%</td>
<td>20,669.2</td>
<td>14,468.5</td>
</tr>
<tr>
<td>Cut back asphalt slow cure (assuming fuel oil solvent)</td>
<td>20.0%</td>
<td>25.0%</td>
<td>14,454.0</td>
<td>3,613.5</td>
</tr>
<tr>
<td>Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)</td>
<td>15.0%</td>
<td>46.4%</td>
<td>10,840.5</td>
<td>5,030.0</td>
</tr>
<tr>
<td>Other asphalt with solvent binder</td>
<td>25.9%</td>
<td>2.5%</td>
<td>18,717.9</td>
<td>467.9</td>
</tr>
</tbody>
</table>

Worst Case PTE of VOC = 17,370.1

### Hazardous Air Pollutants

<table>
<thead>
<tr>
<th>Worst Case Total HAP Content of VOC solvent (weight %)* = 26.08%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worst Case Single HAP Content of VOC solvent (weight %)* = 9.0%</td>
</tr>
<tr>
<td>Xylenes</td>
</tr>
</tbody>
</table>

PTE of Total HAPs (tons/yr) = 4,530.76
PTE of Single HAP (tons/yr) = 1,563.31

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

<table>
<thead>
<tr>
<th>Volatile Organic HAP</th>
<th>CAS#</th>
<th>Gasoline</th>
<th>Kerosene</th>
<th>Diesel (RD)</th>
<th>No. 2 Fuel Oil</th>
<th>No. 6 Fuel Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3-Butadiene</td>
<td>109-99-0</td>
<td>3.70E-5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2,4-Trimethylpentane</td>
<td>540-84-1</td>
<td>2.40%</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>63-32-9</td>
<td></td>
<td>4.70E-5%</td>
<td>1.80E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>208-96-8</td>
<td>4.50E-5%</td>
<td>6.00E-5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthracene</td>
<td>120-12-7</td>
<td>1.20E-6%</td>
<td>5.00E-5%</td>
<td>2.90E-5%</td>
<td>5.00E-5%</td>
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</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>1.90%</td>
<td></td>
<td>2.90E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzo(a)anthracene</td>
<td>56-55-3</td>
<td>9.60E-7%</td>
<td>4.50E-7%</td>
<td>5.00E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzo(a)pyrene</td>
<td>50-32-8</td>
<td>2.20E-6%</td>
<td>2.10E-7%</td>
<td>4.60E-5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzo(g,h,i)perylene</td>
<td>191-24-2</td>
<td>1.20E-7%</td>
<td>5.70E-8%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Biphenyl</td>
<td>52-52-4</td>
<td></td>
<td>6.30E-4%</td>
<td>7.20E-5%</td>
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<td></td>
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<tr>
<td>Chrysene</td>
<td>218-01-9</td>
<td>4.50E-7%</td>
<td>1.40E-6%</td>
<td>6.90E-4%</td>
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<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>1.70%</td>
<td></td>
<td></td>
<td>3.40E-4%</td>
<td></td>
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<tr>
<td>Fluoranthene</td>
<td>206-44-0</td>
<td>7.10E-6%</td>
<td>5.90E-5%</td>
<td>1.40E-5%</td>
<td>2.40E-4%</td>
<td></td>
</tr>
<tr>
<td>Fluorene</td>
<td>86-73-7</td>
<td>4.20E-5%</td>
<td>8.60E-4%</td>
<td>1.90E-4%</td>
<td>1.00E-4%</td>
<td></td>
</tr>
<tr>
<td>Indeno(1,2,3-cd)pyrene</td>
<td>193-39-5</td>
<td>1.07%</td>
<td></td>
<td></td>
<td>3.40E-4%</td>
<td></td>
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<tr>
<td>Methyl-tert-butylether</td>
<td>1934-04-4</td>
<td>0.33%</td>
<td></td>
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<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>0.25%</td>
<td>0.31%</td>
<td>0.26%</td>
<td>0.22%</td>
<td>4.20E-5%</td>
</tr>
<tr>
<td>n-Nonane</td>
<td>110-54-3</td>
<td>2.40%</td>
<td></td>
<td></td>
<td>3.40E-4%</td>
<td></td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>55-01-8</td>
<td>8.60E-6%</td>
<td>8.80E-4%</td>
<td>7.90E-4%</td>
<td>2.10E-4%</td>
<td></td>
</tr>
<tr>
<td>Pyrene</td>
<td>129-00-0</td>
<td>2.40E-6%</td>
<td>4.60E-5%</td>
<td>2.90E-5%</td>
<td>2.30E-5%</td>
<td></td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>8.10%</td>
<td></td>
<td>0.18%</td>
<td>6.20E-4%</td>
<td></td>
</tr>
<tr>
<td>Total Xylenes</td>
<td>1330-20-7</td>
<td>9.00%</td>
<td>0.50%</td>
<td>0.23%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Organic HAPs = 26.08%

Worst Single HAP = 0.33%
Xylenes
Naphthalene
Xylenes
Naphthalene
Xylenes
Phenanthrene

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)]


Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit
Appendix A.1: Unlimited Emissions Calculations
Gasoline Fuel Transfer and Dispensing Operation

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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:

\[
\text{Gasoline Throughput} = 0 \text{ gallons/day} = 0.0 \text{ kgal/yr}
\]

**Volatile Organic Compounds**

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Emission Factor (lb/kgal of throughput)</th>
<th>PTE of VOC (tons/yr)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filling storage tank (balanced submerged filling)</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Tank breathing and emptying</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Vehicle refueling (displaced losses - controlled)</td>
<td>1.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Spillage</td>
<td>0.7</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>0.00</strong></td>
</tr>
</tbody>
</table>

**Hazardous Air Pollutants**

<table>
<thead>
<tr>
<th></th>
<th>Worst Case Total HAP Content of VOC solvent (weight %)* = 26.08%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Worst Case Single HAP Content of VOC solvent (weight %)* = 9.0% Xylenes</td>
</tr>
<tr>
<td>Limited PTE of Total HAPs (tons/yr) =</td>
<td>0.00</td>
</tr>
<tr>
<td>Limited PTE of Single HAP (tons/yr) =</td>
<td>0.00 Xylenes</td>
</tr>
</tbody>
</table>

**Methodology**

The gasoline throughput was provided by the source.

\[
\text{Gasoline Throughput (kcal/yr)} = [\text{Gasoline Throughput (lbs/day)}] \cdot [365 \text{ days/yr}] \cdot [\text{kcal/1000 gal}] \\
\text{PTE of VOC (tons/yr)} = [\text{Gasoline Throughput (kcal/yr)}] \cdot [\text{Emission Factor (lb/kgal)}] \cdot [\text{ton/2000 lb}] \\
\text{PTE of Total HAPs (tons/yr)} = [\text{Worst Case Total HAP Content of VOC solvent (weight %)}] \cdot [\text{PTE of VOC (tons/yr)}] \\
\text{PTE of Single HAP (tons/yr)} = [\text{Worst Case Single HAP Content of VOC solvent (weight %)}] \cdot [\text{PTE of VOC (tons/yr)}]
\]


**Abbreviations**

VOC = Volatile Organic Compounds
PTE = Potential to Emit
## Appendix A.2: Limited Emissions Summary

### Entire Source - Batch Mix

**Company Name:** Temple and Temple Excavating, Inc.  
**Source Address:** 114 Tarr Avenue, Salem, IN 47167  
**Permit Number:** F175-41089-00028  
**Reviewer:** Taylor Wade

#### Asphalt Plant Limitations - Batch Mix

<table>
<thead>
<tr>
<th>Limitation Type</th>
<th>Limitation Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Hourly Asphalt Production</td>
<td>165 ton/hr</td>
</tr>
<tr>
<td>Annual Asphalt Production Limitation</td>
<td>427.75 ton/yr</td>
</tr>
<tr>
<td>Blast Furnace Slag Usage Limitation</td>
<td>0 ton/yr 1.50% sulfur</td>
</tr>
<tr>
<td>Steel Slag Usage Limitation</td>
<td>0 ton/yr 0.66% sulfur</td>
</tr>
<tr>
<td>Maximum Dryer Fuel Input Rate</td>
<td>85 MMBtu/hr</td>
</tr>
<tr>
<td>Natural Gas Limitation</td>
<td>745 MCF/yr</td>
</tr>
<tr>
<td>No. 2 Fuel Oil Limitation</td>
<td>0 gal/yr, and 0.50% sulfur</td>
</tr>
<tr>
<td>No. 4 Fuel Oil Limitation</td>
<td>0 gal/yr, and 0.50% sulfur</td>
</tr>
<tr>
<td>Propane Limitation</td>
<td>0 gal/yr, and 0.20 gr/100 ft³ sulfur</td>
</tr>
<tr>
<td>Butane Limitation</td>
<td>0 gal/yr, and 0.22 gr/100 ft³ sulfur</td>
</tr>
<tr>
<td>Used/Waste Oil Limitation</td>
<td>0 gal/yr, and 1.00% sulfur, 0.50% ash, 0.200% chlorine, 0.010% lead</td>
</tr>
<tr>
<td>Diesel Fuel Limitation - Generator &lt; 600 HP</td>
<td>0 gal/yr, and 0.50% sulfur</td>
</tr>
<tr>
<td>Diesel Fuel Limitation - Generator &gt; 600 HP</td>
<td>0 gal/yr, and 0.50% sulfur</td>
</tr>
<tr>
<td>PM Dryer/Mixer Limitation</td>
<td>0.926 lb/ton of asphalt production</td>
</tr>
<tr>
<td>PM10 Dryer/Mixer Limitation</td>
<td>0.378 lb/ton of asphalt production</td>
</tr>
<tr>
<td>PM2.5 Dryer/Mixer Limitation</td>
<td>0.400 lb/ton of asphalt production</td>
</tr>
<tr>
<td>CO Dryer/Mixer Limitation</td>
<td>1.13 lb/ton of asphalt production</td>
</tr>
<tr>
<td>VOC Dryer/Mixer Limitation</td>
<td>0.008 lb/ton of asphalt production</td>
</tr>
<tr>
<td>Steel Slag SO2 Dryer/Mixer Limitation</td>
<td>0.000 lb/ton of slag processed</td>
</tr>
<tr>
<td>Blast Furnace Slag SO2 Dryer/Mixer Limitation</td>
<td>0.000 lb/ton of slag processed</td>
</tr>
<tr>
<td>PM Dryer/Mixer Slag Processing Limitation</td>
<td>0.113 lb/ton of slag processed</td>
</tr>
<tr>
<td>PM10 Dryer/Mixer Slag Processing Limitation</td>
<td>0.000 lb/ton of slag processed</td>
</tr>
<tr>
<td>PM2.5 Dryer/Mixer Slag Processing Limitation</td>
<td>0.000 lb/ton of slag processed</td>
</tr>
<tr>
<td>CO Dryer/Mixer Slag Processing Limitation</td>
<td>0.000 lb/ton of slag processed</td>
</tr>
<tr>
<td>VOC Dryer/Mixer Slag Processing Limitation</td>
<td>0.000 lb/ton of slag processed</td>
</tr>
<tr>
<td>Diesel Fuel Limitation - Generator &lt; 600 HP</td>
<td>0 gal/yr, and 0.50% sulfur</td>
</tr>
<tr>
<td>Diesel Fuel Limitation - Generator &gt; 600 HP</td>
<td>0 gal/yr, and 0.50% sulfur</td>
</tr>
</tbody>
</table>

### Limited/Controlled Emissions

#### Process Description

<table>
<thead>
<tr>
<th>Criteria Pollutants</th>
<th>Limited/Controlled Potential Emissions (tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PM</td>
</tr>
<tr>
<td>Ducted Emissions</td>
<td></td>
</tr>
<tr>
<td>Dryer Fuel Combustion (worst case)</td>
<td>0.71</td>
</tr>
<tr>
<td>Dryer/Mixer and Batch Tower (Process)</td>
<td>225.87</td>
</tr>
<tr>
<td>Hot Oil Heater Fuel Combustion(Process)</td>
<td>0.02</td>
</tr>
<tr>
<td>Diesel-Fired Generator &lt; 600 HP</td>
<td>0.00</td>
</tr>
<tr>
<td>Diesel-Fired Generator &gt; 600 HP</td>
<td>0.00</td>
</tr>
<tr>
<td>Total Ducted Emissions</td>
<td>225.89</td>
</tr>
<tr>
<td>Fugitive Emissions</td>
<td></td>
</tr>
<tr>
<td>Asphalt Load-Out, Fill Fitting, On-Site Yard</td>
<td>0.27</td>
</tr>
<tr>
<td>Material Storage Plan</td>
<td>0.34</td>
</tr>
<tr>
<td>Material Processing and Handling</td>
<td>1.56</td>
</tr>
<tr>
<td>Material Crushing, Screening, and Conveying</td>
<td>0.70</td>
</tr>
<tr>
<td>Unpaved and Paved Roads (worst case)</td>
<td>20.20</td>
</tr>
<tr>
<td>Cold Mix Asphalt Production</td>
<td>0.00</td>
</tr>
<tr>
<td>Gravimetric Fuel Transfer and Dispensing</td>
<td>0.00</td>
</tr>
<tr>
<td>Volatile Organic Liquid Storage Vessels</td>
<td>0.00</td>
</tr>
<tr>
<td>Total Fugitive Emissions</td>
<td>23.11</td>
</tr>
</tbody>
</table>

**Totals Limited/Controlled Emissions:** 249.00 | 99.00 | 99.00 | 1.13 | 38.11 | 94.27 | 98.99 | 46,755.54 | 24.90 | 8.58 (xylene)  

**negl** = negligible  

*Worst Case Emissions (tons/year) = 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.
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

| Source Address: 114 Tarr Avenue, Salem, IN 47167 |
|-----------------|-----------------|-----------------|
| Permit Number: F175-41089-00028 |
| Reviewer: Taylor Wade |

- **Natural Gas Limitation** = (MMCF/yr) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
- **Residual (No. 5 or No. 6) Fuel Oil Limitation** = (MMBtu/hr) * (Emission Factor (lb/MMBtu)) * (ton/2000 lbs)
- **Used/Waste Oil Limitation** = (Mgal/yr) * (Emission Factor (lb/MMBtu)) * (ton/2000 lbs)

### Limited Emissions

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>PM10/PM2.5</td>
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</table>

### Methodology

- **Natural Gas Limitation (ton/yr)** = Natural Gas Limitation (MMCF/yr) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
- **Residual Fuel Oil Limitation (ton/yr)** = Residual Fuel Oil Limitation (MMBtu/hr) * (Emission Factor (lb/MMBtu)) * (ton/2000 lbs)
- **Used/Waste Oil Limitation (ton/yr)** = Used/Waste Oil Limitation (Mgal/yr) * (Emission Factor (lb/MMBtu)) * (ton/2000 lbs)

### Abbreviations

- PM = Particulate Matter
- VOC = Volatile Organic Compounds
- HAP = Hazardous Air Pollutant
- NOx = Nitrogen Oxides
- PAH = Polynuclear Aromatic Hydrocarbon
- VOC = Volatile Organic Compounds

### Appendix A.2: Limited Emissions Summary

**Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

- **Company Name:** Temple and Temple Excavating, Inc.
- **Source Address:** 114 Tarr Avenue, Salem, IN 47167
- **Permit Number:** F175-41089-00028
- **Reviewer:** Taylor Wade

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

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<th>Maximum Fuel Input Rate</th>
<th>100 MMBtu/hr</th>
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<td>Natural Gas Limitation</td>
<td>745 MMCF/yr</td>
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<tr>
<td>No. 2 Fuel Oil Limitation</td>
<td>0.5 gal/yr, and 0.50 % sulfur</td>
</tr>
<tr>
<td>No. 4 Fuel Oil Limitation</td>
<td>0.5 gal/yr, and 0.50 % sulfur</td>
</tr>
<tr>
<td>Residual (No. 5 or No. 6) Fuel Oil Limitation</td>
<td>0.5 gal/yr, and 0.50 % sulfur</td>
</tr>
<tr>
<td>Propane Limitation</td>
<td>0.20 gr/MMCF r sulfate</td>
</tr>
<tr>
<td>Butane Limitation</td>
<td>0.20 gr/MMCF r sulfate</td>
</tr>
<tr>
<td>Used/Waste Oil Limitation</td>
<td>0.50 % ash, 0.200 % chlorine, 0.010 % lead</td>
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### Limited Emissions

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<td></td>
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</tr>
</tbody>
</table>

### Methodology

- **Natural Gas Limitation (ton/yr)** = Natural Gas Limitation (MMCF/yr) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
- **Residual Fuel Oil Limitation (ton/yr)** = Residual Fuel Oil Limitation (MMBtu/hr) * (Emission Factor (lb/MMBtu)) * (ton/2000 lbs)
- **Used/Waste Oil Limitation (ton/yr)** = Used/Waste Oil Limitation (Mgal/yr) * (Emission Factor (lb/MMBtu)) * (ton/2000 lbs)

Sources of AP-42 Emission Factors for fuel combustion:

- **Natural Gas:** 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
- **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
- **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.2: Limited Emissions Summary
Greenhouse Gas (CO2e) Emissions from the Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: P175-41089-00028
Reviewer: Taylor Wade

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

Fuel Limitations

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Limitation (gals/yr)</th>
<th>Sulfur</th>
<th>Limitation (per 100 lbs sulfur)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Fuel Oil</td>
<td>0</td>
<td>0.50%</td>
<td>0.20 ppm</td>
</tr>
<tr>
<td>No. 4 Fuel Oil</td>
<td>0</td>
<td>0.50%</td>
<td>0.22 ppm</td>
</tr>
<tr>
<td>Residual (No. 5 or No. 6) Fuel Oil</td>
<td>0</td>
<td>0.50%</td>
<td>0.50 ppm</td>
</tr>
<tr>
<td>Propane</td>
<td>0</td>
<td>0.20%</td>
<td>0.20 ppm</td>
</tr>
<tr>
<td>Butane</td>
<td>0</td>
<td>0.22%</td>
<td>0.22 ppm</td>
</tr>
<tr>
<td>Used/Waste Oil</td>
<td>0</td>
<td>0.50%</td>
<td>0.50 ppm</td>
</tr>
</tbody>
</table>

Limited Emissions

<table>
<thead>
<tr>
<th>Compound</th>
<th>Emission Factors (units)</th>
<th>Global Warming Potential (GWP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>1.00%</td>
<td>1</td>
</tr>
<tr>
<td>CH4</td>
<td>0.20%</td>
<td>25</td>
</tr>
<tr>
<td>N2O</td>
<td>0.10%</td>
<td>298</td>
</tr>
</tbody>
</table>

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

CO2e Equivalent Emissions (tons/yr) = CO2e for Worst Case Fuel (tons/yr)

Methodology

Fuel Limitations from TSD Appendix A.2, page 1 of 15.

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

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

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

All Other Fuels: Limited Potential to Emit (tons/yr) = Fuel Limitation (gals/yr) x Emission Factor (lgal/MMCF) x Conversion Factor (1000 gals/MMCF) x Heating Value of the Fuel Oil (MMBtu/gal) x Conversion Factor (1000 gals/MMCF)

Abbreviations

CH4 = Methane  
CO2 = Carbon Dioxide  
N2O = Nitrogen Dioxide  
PTE = Potential to Emit
The following calculations determine the limited emissions from the aggregate drying/mixing and the batch tower.

### Maximum Hourly Asphalt Production
- 165 ton/hr

### Annual Asphalt Production Limitation
- 487,776 ton/yr

### Emission Factors and Limitations
- **PM Dryer/Mixer Limitation:** 0.926 lb/ton of asphalt production
- **PM10 Dryer/Mixer Limitation:** 0.378 lb/ton of asphalt production
- **PM2.5 Dryer/Mixer Limitation:** 0.400 lb/ton of asphalt production
- **CO Dryer/Mixer Limitation:** 0.400 lb/ton of asphalt production
- **VOC Dryer/Mixer Limitation:** 0.008 lb/ton of asphalt production

### Emission Factor or Limitation (lb/ton)

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Batch Mix Plant (dryer, hot screens, and mixer)</th>
<th>Limited/Controlled Potential to Emit (tons/yr)</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
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<td>0.66</td>
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</table>

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

### Abbreviations
- **PM** = Particulate Matter
- **SO2** = Sulfur Dioxide
- **CO** = Carbon Monoxide
- **PAH** = Polyaromatic Hydrocarbon
- **PM10** = Particulate Matter (<10 um)
- **NOx** = Nitrous Oxides
- **PM2.5** = Particulate Matter (< 2.5 um)
- **VOC** = Volatile Organic Compounds
- **HAP** = Hazardous Air Pollutant
- **HCl** = Hydrogen Chloride
Appendix A.2: Limited Emissions Summary

Greenhouse Gas (CO2e) Emissions from the Batch-Mix Plant (Dryer/Mixer) Process Emissions

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas</th>
<th>No. 2 Fuel Oil</th>
<th>Waste Oil</th>
<th>Global Warming Potentials (GWP)</th>
<th>Limited Potential to Emit (tons/yr)</th>
<th>CO2e for Worst Case Fuel (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor (lb/ton)</td>
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<td>Batch-Mix Plant (dryer/mixer)</td>
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</tr>
<tr>
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<td>37</td>
<td>37</td>
<td>37</td>
<td>1</td>
<td>9,023.85</td>
<td>9,023.85</td>
</tr>
<tr>
<td>CH4</td>
<td>0.0074</td>
<td>0.0074</td>
<td>0.0074</td>
<td>25</td>
<td>1.80</td>
<td>1.80</td>
</tr>
<tr>
<td>N2O</td>
<td>298</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9,025.66</td>
<td>9,025.66</td>
</tr>
</tbody>
</table>

CO2e Equivalent Emissions (tons/yr) | 9,068.97 | 9,068.97 | 9,068.97

Methodology

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8
There are no emission factors for N2O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

Limited/Controlled Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.
Limited CO2e Emissions (tons/yr) = CO2 Potential Emission of "worst case" fuel (ton/yr) x CO2 GWP (1) + CH4 Potential Emission of "worst case" fuel (ton/yr) x CH4 GWP (25) + N2O Potential Emission of "worst case" fuel (ton/yr) x N2O GWP (298).

Abbreviations
CO2 = Carbon Dioxide  
CH4 = Methane  
N2O = Nitrogen Dioxide  
PTE = Potential to Emit
Appendix A.2: Limited Emissions Summary
Dryer/Mixer Slag Processing

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

Limited Blast Furnace Slag Usage = 0 ton/yr  1.50 % sulfur
Limited Annual Steel Slag Usage = 0 ton/yr  0.66 % sulfur

<table>
<thead>
<tr>
<th>Type of Slag</th>
<th>SO2 Emission Factor (lb/ton)</th>
<th>Limited Potential to Emit SO2 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blast Furnace Slag*</td>
<td>0.0000</td>
<td>0.0</td>
</tr>
<tr>
<td>Steel Slag**</td>
<td>0.0000</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Methodology

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

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

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

Abbreviations
SO2 = Sulfur Dioxide
## Appendix A.2: Limited Emissions Summary

### Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

**Company Name:** Temple and Temple Excavating, Inc.  
**Source Location:** 114 Tarr Avenue, Salem, IN 47167  
**Permit Number:** F175-41089-00028  
**Reviewer:** Taylor Wade

---

**Maximum Hot Oil Heater Fuel Input Rate: 2.00 MMBtu/hr**  
**Natural Gas Usage: 18 MMCF/yr**  
**No. 2 Fuel Oil Usage: 0 gal/yr, and 0.50 % sulfur**

---

### Unlimited/Uncontrolled Emissions

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Hot Oil Heater Emission Factor (lb/MMCF)</th>
<th>Hot Oil Heater Emission Factor (lb/kgal)</th>
<th>Hot Oil Heater Emission Factor (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>1.9</td>
<td>0.017</td>
<td>0.000</td>
</tr>
<tr>
<td>PM10/PM2.5</td>
<td>7.6</td>
<td>0.067</td>
<td>0.07</td>
</tr>
<tr>
<td>SO2</td>
<td>0.6</td>
<td>0.005</td>
<td>0.000</td>
</tr>
<tr>
<td>No. 2 Fuel Oil</td>
<td>100</td>
<td>0.876</td>
<td>0.000</td>
</tr>
<tr>
<td>VOC</td>
<td>5.5</td>
<td>0.048</td>
<td>0.000</td>
</tr>
<tr>
<td>CO</td>
<td>84</td>
<td>0.736</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Hazardous Air Pollutant Emission Factors

<table>
<thead>
<tr>
<th>Hazardous Air Pollutant</th>
<th>Worst Case Fuel Emission Factor (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>1.8E-06</td>
</tr>
<tr>
<td>Beryllium</td>
<td>1.1E-07</td>
</tr>
<tr>
<td>Cadmium</td>
<td>9.6E-06</td>
</tr>
<tr>
<td>Chromium</td>
<td>1.2E-05</td>
</tr>
<tr>
<td>Cobalt</td>
<td>7.4E-07</td>
</tr>
<tr>
<td>Lead</td>
<td>4.4E-06</td>
</tr>
<tr>
<td>Manganese</td>
<td>3.3E-06</td>
</tr>
<tr>
<td>Mercury</td>
<td>7.3E-06</td>
</tr>
<tr>
<td>Nickel</td>
<td>1.8E-05</td>
</tr>
<tr>
<td>Selenium</td>
<td>2.1E-05</td>
</tr>
<tr>
<td>Benzene</td>
<td>1.8E-05</td>
</tr>
<tr>
<td>Dichlorobenzene</td>
<td>1.1E-05</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>0</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>0.011</td>
</tr>
<tr>
<td>Hexane</td>
<td>0.02</td>
</tr>
<tr>
<td>Phenol</td>
<td>0</td>
</tr>
<tr>
<td>Toluene</td>
<td>3.0E-05</td>
</tr>
</tbody>
</table>

**Total PAH Haps (Hexane): negl**  
**Total PAH Haps (Formaldehyde): negl**  
**Total PAH Haps (Toluene): 0**

**Total HAP = 0.0E+00**  
**Worst Single HAP = 1.6E-02**

---

**Methodology**

- **Natural Gas Usage (MMCF/yr):** \( \text{Maximum Fuel Input Rate (MMBtu/hr) \times 8,760 \text{ hrs/yr} \times \frac{1 \text{ MMCF}}{1,000 \text{ MMBtu}} } \)
- **Equivalent Oil Usage (gal/yr):** \( \text{Maximum Fuel Input Rate (MMBtu/hr) \times 8,760 \text{ hrs/yr} \times 0.140 \text{ gal/MMBTU} } \)
- **Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr):** \( \text{Natural Gas Usage (MMCF/yr) \times Emission Factor (lb/MMCF)} \times \frac{2000 \text{ lbs}}{1 \text{ ton}} \)
- **All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr):** \( \text{Maximum Fuel Usage (gals/yr) \times Emission Factor (lb/kgal)} \times \frac{2000 \text{ lbs}}{1 \text{ ton}} \)

**Sources of AP-42 Emission Factors for fuel combustion:**

- **Natural Gas:** AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- **No. 2 Fuel Oil:** AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

---

**Abbreviations**

- **PM** - Particulate Matter  
- **PM10** - Particulate Matter (<10 um)  
- **PM2.5** - Particulate Matter (<2.5 um)  
- **SO2** - Sulfur Dioxide  
- **NOx** - Nitrous Oxides  
- **VOC** - Volatile Organic Compounds

**CO** = Carbon Monoxide  
**HAP** = Hazardous Air Pollutant  
**HCl** = Hydrogen Chloride  
**PAH** = Polyaromatic Hydrocarbon

---

**Equivalent Natural Gas Usage (MMCF/yr) =** \( \text{Maximum Fuel Input Rate (MMBtu/hr) \times 8,760 \text{ hrs/yr} \times \frac{1 \text{ MMCF}}{1,000 \text{ MMBtu}} } \)

**Equivalent Oil Usage (gal/yr) =** \( \text{Maximum Fuel Input Rate (MMBtu/hr) \times 8,760 \text{ hrs/yr} \times 0.140 \text{ gal/MMBTU} } \)
Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO2e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr
Natural Gas Usage = 17.52 MMCF/yr
No. 2 Fuel Oil Usage = 0.00 gal/yr, 0.50 % sulfur

Unlimited/Uncontrolled Emissions

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas (lb/MMCF)</th>
<th>No. 2 Fuel Oil (lb/kgal)</th>
<th>Global Warming Potentials (GWP)</th>
<th>Natural Gas (tons/yr)</th>
<th>No. 2 Fuel Oil (tons/yr)</th>
<th>Unlimited/Uncontrolled Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>120.161.84</td>
<td>22.501.41</td>
<td>1</td>
<td>1,052.62</td>
<td>0.00</td>
<td>1,058.91</td>
</tr>
<tr>
<td>CH4</td>
<td>2.49</td>
<td>0.91</td>
<td>25</td>
<td>0.022</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>N2O</td>
<td>2.20</td>
<td>0.26</td>
<td>298</td>
<td>0.019</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>1,052.66</td>
<td>0.00</td>
<td>1,058.91</td>
</tr>
</tbody>
</table>

CO2e Equivalent Emissions (tons/yr) 1,058.91 0.00

Methodology
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)
Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2.
No. 2 Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8.

Emission Factor (EF) Conversions:
Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]
Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

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

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

Abbreviations
CH4 = Methane
N2O = Nitrogen Dioxide
CO2 = Carbon Dioxide
PTE = Potential to Emit
Appendix A.2: Limited Emissions Summary

Hot Oil Heating System - Process Emissions

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

Maximum Fuel Input Rate To Hot Oil Heater = 2.00 MMBtu/hr
Natural Gas Usage = 17.52 MMCF/yr, and
No. 2 Fuel Oil Usage = 0.00 gal/yr

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas (lb/ft³)</th>
<th>No. 2 Fuel Oil (lb/gal)</th>
<th>Natural Gas (tons/yr)</th>
<th>No. 2 Fuel Oil (tons/yr)</th>
<th>Worse Case PTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>2.60E-08</td>
<td>2.65E-05</td>
<td>2.28E-04</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>CO</td>
<td>8.90E-06</td>
<td>0.0012</td>
<td>0.078</td>
<td>0.00</td>
<td>0.078</td>
</tr>
<tr>
<td>CO2</td>
<td>0.20</td>
<td>28.00</td>
<td>1752.00</td>
<td>0.00</td>
<td>1752.00</td>
</tr>
<tr>
<td>Hazardous Air Pollutant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>2.60E-08</td>
<td>3.50E-06</td>
<td>2.28E-04</td>
<td>0.00E+00</td>
<td>2.28E-04</td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>5.30E-07</td>
<td>0.0012</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>2.00E-07</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Anthracene</td>
<td>1.90E-07</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Benzo(b)fluoranthene</td>
<td>1.00E-07</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Fluoranthene</td>
<td>4.40E-08</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Fluorene</td>
<td>3.20E-08</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>1.70E-05</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>4.90E-06</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Pyrene</td>
<td>3.20E-08</td>
<td>0.00E+00</td>
<td>0.078</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
</tbody>
</table>

Total HAPs 2.28E-04
Worst Single HAP 2.28E-04 (Naphthalene)

Methodology

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

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

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

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

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

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

Abbreviations
CO = Carbon Monoxide
VOC = Volatile Organic Compound
CO2 = Carbon Dioxide
Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines - Diesel Fuel

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM10</th>
<th>direct PM2.5</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.0021</td>
<td>0.0310</td>
<td>0.0025</td>
</tr>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>43.07</td>
<td>43.07</td>
<td>43.07</td>
<td>40.13</td>
<td>806.85</td>
<td>49.22</td>
</tr>
<tr>
<td>Limited Emission in tons/yr</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

1 The AP-42 Chapter 3.3-1 emission factors in lb/kgal 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.
2 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)
3 PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.
4 The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.
5 Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) / 10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1.000 (gal/kgal)

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>1,3-Butadiene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrel</th>
<th>Total PAH HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>1.28E-01</td>
<td>5.60E-02</td>
<td>3.91E-02</td>
<td>5.36E-03</td>
<td>1.62E-01</td>
<td>1.05E-01</td>
<td>1.27E-02</td>
<td>2.30E-02</td>
</tr>
<tr>
<td>Limited Emission in tons/yr</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
</tbody>
</table>

Hazardous Air Pollutants (HAPs)

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

CO2e Total in tons/yr 0.00

Limited Emission of Green House Gas Emissions

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>1.15</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Emission Factor in kg/MMBtu</td>
<td>NA</td>
<td>0.003</td>
<td>0.0006</td>
</tr>
<tr>
<td>Emission Factor in kg/kgal</td>
<td>22.512</td>
<td>0.91</td>
<td>0.18</td>
</tr>
<tr>
<td>Limited Emission in tons/yr</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

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

Limited Emission of Green House Gas Emissions (GHG)

Summed Limited Emissions in tons/yr 0.00

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited Emission of Green House Gas Emissions (GHG)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]
Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

## Large Reciprocating Internal Combustion Engines - Diesel Fuel

### Output Rating (>600 HP)

**Company Name:** Temple and Temple Excavating, Inc.  
**Source Address:** 114 Tarr Avenue, Salem, IN 47167  
**Permit Number:** F175-41089-00028  
**Reviewer:** Taylor Wade

<table>
<thead>
<tr>
<th>Output Horsepower Rating (hp)</th>
<th>0.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited Hours Operated per Year</td>
<td>0</td>
</tr>
<tr>
<td>Limited Throughput (hp-hr/yr)</td>
<td>0</td>
</tr>
<tr>
<td>Limited Diesel Fuel Usage (gal/yr)</td>
<td>0</td>
</tr>
</tbody>
</table>

| Sulfur Content (%) by weight | 0.50 |

### Pollutant Emissions

#### PM

<table>
<thead>
<tr>
<th>Emission Factor in lb/hp-hr</th>
<th>7.00E-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMBtu</td>
<td>0.0573</td>
</tr>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>13.70</td>
</tr>
</tbody>
</table>

#### PM2.5

<table>
<thead>
<tr>
<th>Emission Factor in lb/hp-hr</th>
<th>4.05E-03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMBtu</td>
<td>0.0573</td>
</tr>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>21.85</td>
</tr>
</tbody>
</table>

#### SO2

<table>
<thead>
<tr>
<th>Emission Factor in lb/hp-hr</th>
<th>2.40E-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMBtu</td>
<td>0.0502</td>
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<tr>
<td>Emission Factor in lb/kgal</td>
<td>7.19</td>
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</tbody>
</table>

#### NOx

<table>
<thead>
<tr>
<th>Emission Factor in lb/hp-hr</th>
<th>7.05E-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMBtu</td>
<td>0.0502</td>
</tr>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>46.82</td>
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</tbody>
</table>

#### VOC

<table>
<thead>
<tr>
<th>Emission Factor in lb/hp-hr</th>
<th>1.30E-03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMBtu</td>
<td>0.0002</td>
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<tr>
<td>Emission Factor in lb/kgal</td>
<td>13.80</td>
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</table>

#### CO

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<tr>
<th>Emission Factor in lb/hp-hr</th>
<th>1.07E-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMBtu</td>
<td>0.0002</td>
</tr>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

### Hazardous Air Pollutants (HAPs)

#### Benzene

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>7.76E-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>1.06E-01</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### Toluene

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>2.81E-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>3.85E-02</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### Xylene

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>1.93E-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>1.24E-02</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### Formaldehyde

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>7.88E-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>3.45E-03</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### Acetaldehyde

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>2.52E-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>1.08E-02</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### Acreolen

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>7.88E-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>3.45E-03</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Green House Gas Emissions (GHG)

#### CO2

<table>
<thead>
<tr>
<th>Emission Factor in lb/hp-hr</th>
<th>1.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>6.35E-05</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### CH4

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>NA</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### N2O

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMBtu</th>
<th>0.0006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/kgal</td>
<td>0.0006</td>
</tr>
<tr>
<td>Emission in tons/yr</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### CO2e Total in tons/yr

<table>
<thead>
<tr>
<th>Summed Potential Emissions in tons/yr</th>
<th>0.00</th>
</tr>
</thead>
</table>

**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 (Btu/lb) * 7.1 (lb/gal)

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

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

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

Limited Emissions (tons/yr) = Limited Diesel Fuel Usage (gal/yr) * Emission Factor (lb/kgal) / (1,000 gal/ton) / (2,000 lb/ton) / 2,000 lb/ton / 1,000 gal/ton / 7.1 (lb/gal) / 7,000 (Btu/hp-hr) / 19300 (Btu/lb) / 7.1 (lb/gal) / 19,300 (Btu/lb) / 7.1 (lb/gal) / 1,000 (gal/kgal)

CO2e (tons/yr) = CO2 Potential Emission (tons/yr) + CH4 Potential Emission (tons/yr) + N2O Potential Emission (tons/yr) + NO2 Potential Emission (tons/yr) + N2O GWP (298).
Appendix A.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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.

### Asphal Temperature, T = 325°F

### Asphalt Volatility Factor, V = -0.5

### Annual Asphalt Production Limitation = 487,776 tons/yr

#### Emission Factors (lb/ton asphalt) vs. Limited Potential to Emit (tons/yr)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Load-Out</th>
<th>Silo Filling</th>
<th>On-Site Yard</th>
<th>Load-Out</th>
<th>Silo Filling</th>
<th>On-Site Yard</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PM*</td>
<td>5.2E-04</td>
<td>5.9E-04</td>
<td>NA</td>
<td>0.13</td>
<td>0.14</td>
<td>NA</td>
<td>0.27</td>
</tr>
<tr>
<td>Organic PM</td>
<td>3.4E-04</td>
<td>2.5E-04</td>
<td>NA</td>
<td>0.08</td>
<td>0.062</td>
<td>NA</td>
<td>0.15</td>
</tr>
<tr>
<td>TOC</td>
<td>0.004</td>
<td>0.012</td>
<td>0.001</td>
<td>1.01</td>
<td>2.97</td>
<td>0.268</td>
<td>4.3</td>
</tr>
<tr>
<td>CO</td>
<td>0.001</td>
<td>0.001</td>
<td>3.5E-04</td>
<td>0.33</td>
<td>0.288</td>
<td>0.086</td>
<td>0.70</td>
</tr>
</tbody>
</table>

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

#### 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)


Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14):

- Total PM/PM10 EF = 0.000161 + 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 = 0.0072(-V)e^((0.0251)(T+460)-20.43)
- CO EF = 0.00486(-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
### Organic Particulate-Based Compounds (Table 11.1-15)

<table>
<thead>
<tr>
<th>PAH HAPs</th>
<th>CASRN</th>
<th>Category</th>
<th>HAP Type</th>
<th>Source</th>
<th>Load-out and Onsite Yard (% by weight of Total Organic PM)</th>
<th>Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)</th>
<th>Limited Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acenaphthene</td>
<td>83-32-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.26%</td>
<td>0.47%</td>
<td>2.2E-04</td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>208-96-8</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.028%</td>
<td>0.014%</td>
<td>2.3E-05</td>
</tr>
<tr>
<td>Anthracene</td>
<td>120-12-7</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.07%</td>
<td>0.13%</td>
<td>5.8E-05</td>
</tr>
<tr>
<td>Benzo(a)anthracene</td>
<td>56-55-3</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.019%</td>
<td>0.056%</td>
<td>1.6E-05</td>
</tr>
<tr>
<td>Benzo(b)fluoranthene</td>
<td>205-99-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0076%</td>
<td>0</td>
<td>6.3E-06</td>
</tr>
<tr>
<td>Benzo(k)fluoranthene</td>
<td>207-08-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0022%</td>
<td>0</td>
<td>1.8E-06</td>
</tr>
<tr>
<td>Benzo(g,h,i)perylene</td>
<td>191-24-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0019%</td>
<td>0</td>
<td>1.8E-06</td>
</tr>
<tr>
<td>Benzo(a)pyrene</td>
<td>50-32-8</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0023%</td>
<td>0</td>
<td>1.8E-06</td>
</tr>
<tr>
<td>Benzo(e)pyrene</td>
<td>192-97-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0078%</td>
<td>0.0095%</td>
<td>6.5E-06</td>
</tr>
<tr>
<td>Chrysene</td>
<td>218-01-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.103%</td>
<td>0.21%</td>
<td>8.6E-05</td>
</tr>
<tr>
<td>Dibenzo(a,h)anthracene</td>
<td>53-70-3</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.00037%</td>
<td>0</td>
<td>3.1E-07</td>
</tr>
<tr>
<td>Fluoranthene</td>
<td>206-44-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.05%</td>
<td>0.15%</td>
<td>4.2E-05</td>
</tr>
<tr>
<td>Fluorene</td>
<td>86-73-7</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.77%</td>
<td>1.01%</td>
<td>6.4E-04</td>
</tr>
<tr>
<td>Indenol(1,2,3-cd)pyrene</td>
<td>193-39-5</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.00047%</td>
<td>0</td>
<td>3.9E-07</td>
</tr>
<tr>
<td>2-Methylanthanthrene</td>
<td>91-57-6</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>2.38%</td>
<td>5.27%</td>
<td>2.0E-03</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>1.29%</td>
<td>1.82%</td>
<td>1.0E-03</td>
</tr>
<tr>
<td>Perylene</td>
<td>198-55-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.022%</td>
<td>0.03%</td>
<td>1.8E-05</td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-01-8</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.61%</td>
<td>1.80%</td>
<td>6.7E-04</td>
</tr>
<tr>
<td>Pyrene</td>
<td>120-50-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.15%</td>
<td>0.44%</td>
<td>1.2E-04</td>
</tr>
<tr>
<td><strong>Total PAH HAPs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other semi-volatile HAPs</strong></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Phenol</td>
<td>PM/HAP</td>
<td>---</td>
<td>Organic PM</td>
<td>1.18%</td>
<td>0</td>
<td>9.8E-04</td>
<td>0</td>
</tr>
</tbody>
</table>

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

**Methodology**

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]


**Abbreviations**

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter
### Appendix A.2: Limited Emissions Summary

#### Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)

**Organic Volatile-Based Compounds (Table 11.1-16)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CASRN</th>
<th>Category</th>
<th>HAP Type</th>
<th>Source</th>
<th>Speciation Profile</th>
<th>Limited Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Load-out and Onsite Yard (% by weight of TOC)</td>
<td>Silo Filling and Asphalt Storage Tank (% by weight of TOC)</td>
<td>Load-out</td>
</tr>
<tr>
<td>VOC</td>
<td>VOC</td>
<td>---</td>
<td>TOC</td>
<td>94%</td>
<td>100%</td>
<td>0.95</td>
</tr>
<tr>
<td>non-VOC/non-HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methane</td>
<td>74-82-8</td>
<td>non-VOC/non-HAP</td>
<td>---</td>
<td>TOC</td>
<td>6.50%</td>
<td>0.26%</td>
</tr>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>non-VOC/non-HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.046%</td>
<td>0.055%</td>
</tr>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
<td>non-VOC/non-HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.71%</td>
<td>1.10%</td>
</tr>
<tr>
<td>Total non-VOC/non-HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.30%</td>
</tr>
<tr>
<td>Volatile organic HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.052%</td>
<td>0.032%</td>
</tr>
<tr>
<td>Bromomethane</td>
<td>74-83-9</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0096%</td>
<td>0.0049%</td>
</tr>
<tr>
<td>2-Butanone</td>
<td>78-93-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.049%</td>
<td>0.039%</td>
</tr>
<tr>
<td>Carbon Disulfide</td>
<td>75-15-0</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.013%</td>
<td>0.016%</td>
</tr>
<tr>
<td>Chloroethane</td>
<td>75-00-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.00021%</td>
<td>0.004%</td>
</tr>
<tr>
<td>Chloromethane</td>
<td>74-87-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.015%</td>
<td>0.023%</td>
</tr>
<tr>
<td>Cumene</td>
<td>92-82-8</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.11%</td>
<td>0</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.28%</td>
<td>0.038%</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.088%</td>
<td>0.69%</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>100-54-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.15%</td>
<td>0.10%</td>
</tr>
<tr>
<td>Isoctane</td>
<td>540-84-1</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0018%</td>
<td>0.0031%</td>
</tr>
<tr>
<td>Methylene Chloride</td>
<td>75-09-2</td>
<td>non-VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0.00027%</td>
</tr>
<tr>
<td>MTBE</td>
<td>1634-04-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Styrene</td>
<td>100-42-5</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0073%</td>
<td>0.0054%</td>
</tr>
<tr>
<td>Tetrachloroethene</td>
<td>127-18-4</td>
<td>non-VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.067%</td>
<td>0</td>
</tr>
<tr>
<td>Toluene</td>
<td>100-88-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.21%</td>
<td>0.062%</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane</td>
<td>71-55-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chloroform</td>
<td>75-69-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0013%</td>
<td>0</td>
</tr>
<tr>
<td>m/p-Xylene</td>
<td>1330-20-7</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.41%</td>
<td>0.20%</td>
</tr>
<tr>
<td>o-Xylene</td>
<td>95-47-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.08%</td>
<td>0.057%</td>
</tr>
<tr>
<td>Total volatile organic HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.50%</td>
</tr>
</tbody>
</table>

**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: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

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

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

<table>
<thead>
<tr>
<th>Material</th>
<th>Silt Content (wt %)*</th>
<th>Emission Factor (lb/acre/day)</th>
<th>Maximum Anticipated Pile Size (acres)**</th>
<th>PTE of PM (tons/yr)</th>
<th>PTE of PM10/PM2.5 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>2.6</td>
<td>3.01</td>
<td>0.62</td>
<td>0.341</td>
<td>0.119</td>
</tr>
<tr>
<td>Limestone</td>
<td>1.6</td>
<td>1.85</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>RAP</td>
<td>0.5</td>
<td>0.58</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Gravel</td>
<td>1.6</td>
<td>1.85</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Shingles</td>
<td>0.5</td>
<td>0.58</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Slag</td>
<td>3.8</td>
<td>4.40</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Totals 0.34 0.12**

Note: The source has five aggregate storage piles, consisting of gravel, limestone and sand. Each pile size is 60 feet by 90 feet. It's assumed that each pile stores sand as a worst case-assumption.

**Methodology**

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (365 days/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: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

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

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

\[
Ef = k \cdot \frac{0.0032 \cdot \left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}
\]

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

\[
Ef\ (PM) = 2.27E-03 \text{ lb PM/ton of material handled}
\]

\[
Ef\ (PM10) = 1.07E-03 \text{ lb PM10/ton of material handled}
\]

\[
Ef\ (PM2.5) = 1.62E-04 \text{ lb PM2.5/ton of material handled}
\]

Annual Asphalt Production Limitation = 487,776 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 463,387 tons/yr

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Limited Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck unloading of materials into storage piles</td>
<td>0.53 0.25 0.04</td>
</tr>
<tr>
<td>Front-end loader dumping of materials into feeder bins</td>
<td>0.53 0.25 0.04</td>
</tr>
<tr>
<td>Conveyor dropping material into dryer/mixer or batch tower</td>
<td>0.53 0.25 0.04</td>
</tr>
</tbody>
</table>

Total (tons/yr) 1.58 0.75 0.11

Methodology

The percent asphalt cement/binder provided by the source.

Maximum Material Handling Throughput (tons/yr) = \(\text{[Annual Asphalt Production Limitation (tons/yr)]} \times \left[1 - \text{Percent Asphalt Cement/Binder (weight %)}\right]\)

Limited Potential to Emit (tons/yr) = \(\text{[Maximum Material Handling Throughput (tons/yr)]} \times \text{[Emission Factor (lb/ton)]} \times \left(\frac{\text{ton}}{2000 \text{ lbs}}\right)\)

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.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Uncontrolled Emission Factor for PM (lbs/ton)*</th>
<th>Uncontrolled Emission Factor for PM10 (lbs/ton)*</th>
<th>Limited Potential to Emit (tons/yr)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>0.003</td>
</tr>
<tr>
<td>Screening</td>
<td>0.025</td>
<td>0.0087</td>
<td>0.003</td>
</tr>
<tr>
<td>Conveying</td>
<td>0.003</td>
<td>0.0011</td>
<td>0.070 0.25</td>
</tr>
</tbody>
</table>

Limited Potential to Emit (tons/yr) = 0.70 0.25

Methodology

Maximum Material Handling Throughput (tons/yr) = \(\text{[Annual Asphalt Production Limitation (tons/yr)]} \times \left[1 - \text{Percent Asphalt Cement/Binder (weight %)}\right]\)

Limited Potential to Emit (tons/yr) = \(\left(\text{[Maximum Material Handling Throughput (tons/yr)]} \times \text{[Emission Factor (lb/ton)]} \times \left(\frac{\text{ton}}{2000 \text{ lbs}}\right)\right)\)

Raw materials may include stone, gravel, slag, and recycled asphalt pavements (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
### 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).

#### Mitigated Emission Factor

Unmitigated Emission Factor, $E_f =$ 

$$
\text{Mitigated Emission Factor, } E_{\text{ext}} = E_f \times \left[\frac{365 - P}{365}\right] 
$$

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

#### Methodology

- Maximum Material Handling Throughput = Annual Asphalt Production Limitation * (1 - Percent Asphalt Cement/Binder (weight %))
- Maximum Weight of Vehicle and Load
- Maximum one-way distance

#### Source Address

114 Tarr Avenue, Salem, IN 47167

Company Name: Temple and Temple Excavating, Inc.

Permit Number: F175-41089-00028

Reviewers: Taylor Wade

---

<table>
<thead>
<tr>
<th>Process</th>
<th>Vehicle Type</th>
<th>Maximum Weight of Vehicle (tons)</th>
<th>Maximum Weight of Load (tons)</th>
<th>Maximum Weight of Vehicle and Load (tons)</th>
<th>Maximum trips per day (trip/day)</th>
<th>Maximum one-way distance (mi/trip)</th>
<th>Maximum one-way distance (mi/yr)</th>
<th>Total Weight driven per year (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt/Asphalt Truck Enter Full</td>
<td>Dump truck (16 CY)</td>
<td>17.0</td>
<td>32.4</td>
<td>49.4</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>0.057</td>
</tr>
<tr>
<td>Asphalt/Asphalt Truck Leave Empty</td>
<td>Dump truck (16 CY)</td>
<td>12.0</td>
<td>32.0</td>
<td>44.0</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>0.059</td>
</tr>
<tr>
<td>Asphalt/Asphalt Binder Truck Enter Full</td>
<td>Tanker truck (6000 gal)</td>
<td>12.0</td>
<td>32.0</td>
<td>44.0</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>0.059</td>
</tr>
<tr>
<td>Asphalt/Asphalt Binder Truck Leave Empty</td>
<td>Dump truck (16 CY)</td>
<td>12.0</td>
<td>32.0</td>
<td>44.0</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>0.059</td>
</tr>
<tr>
<td>Fuel Oil Truck Enter Full</td>
<td>Fuel oil truck (2000 gal)</td>
<td>12.0</td>
<td>32.0</td>
<td>44.0</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>0.059</td>
</tr>
<tr>
<td>Fuel Oil Truck Leave Empty</td>
<td>Fuel oil truck (2000 gal)</td>
<td>13.0</td>
<td>32.0</td>
<td>45.0</td>
<td>2.1E+04</td>
<td>2.1E+04</td>
<td>2.1E+04</td>
<td>0.059</td>
</tr>
<tr>
<td>Asphalt Concrete Truck Enter Full</td>
<td>Dump truck (16 CY)</td>
<td>17.0</td>
<td>32.0</td>
<td>41.0</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>0.057</td>
</tr>
<tr>
<td>Asphalt Concrete Truck Leave Empty</td>
<td>Dump truck (16 CY)</td>
<td>17.0</td>
<td>32.0</td>
<td>41.0</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>2.0E+04</td>
<td>0.057</td>
</tr>
</tbody>
</table>

#### Totals

- 2.0E+05
- 6.2E+06
- 1.7E+04

<table>
<thead>
<tr>
<th>Process</th>
<th>Vehicle Type</th>
<th>Maximum PTE of PM (Before Control) (tons/yr)</th>
<th>Maximum PTE of PM (After Control) (tons/yr)</th>
<th>Mitigated PTE of PM10 (Before Control) (tons/yr)</th>
<th>Mitigated PTE of PM10 (After Control) (tons/yr)</th>
<th>Mitigated PTE of PM2.5 (Before Control) (tons/yr)</th>
<th>Mitigated PTE of PM2.5 (After Control) (tons/yr)</th>
<th>Mitigated PTE of PM (After Control) (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt/Asphalt Truck Enter Full</td>
<td>Dump truck (16 CY)</td>
<td>1.5</td>
<td>0.5</td>
<td>0.9</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Asphalt/Asphalt Truck Leave Empty</td>
<td>Dump truck (16 CY)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Asphalt/Asphalt Binder Truck Enter Full</td>
<td>Tanker truck (6000 gal)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Asphalt/Asphalt Binder Truck Leave Empty</td>
<td>Dump truck (16 CY)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Fuel Oil Truck Enter Full</td>
<td>Fuel oil truck (2000 gal)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Fuel Oil Truck Leave Empty</td>
<td>Fuel oil truck (2000 gal)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Asphalt Concrete Truck Enter Full</td>
<td>Dump truck (16 CY)</td>
<td>1.5</td>
<td>0.5</td>
<td>0.9</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Asphalt Concrete Truck Leave Empty</td>
<td>Dump truck (16 CY)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

#### Totals

- 46.46
- 19.78
- 1.08
- 20.23
- 5.39
- 0.54

### 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**
Appendix A2: Limited Emissions Summary

Paved Roads

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).

\[ \text{Mitigated PTE (Before Control)} (\text{tons/yr}) = \text{Maximum PTE of PM (tons/yr)} \times (1 - \text{Dust Control Efficiency}) \]

\[ \text{Mitigated PTE (After Control)} (\text{tons/yr}) = \text{Maximum PTE of PM (tons/yr)} \times (1 - \text{Dust Control Efficiency}) \]

\[ \text{Average Vehicle Weight Per Trip} = \frac{\text{Total Weight driven per year (ton/yr)}}{\text{Maximum trips per year (trip/yr)}} \]

\[ \text{Maximum trips per year (trip/yr)} = \frac{\text{Throughput (tons/yr)}}{\text{Maximum Weight of Load (tons/trip)}} \]

\[ \text{Maximum Weight of Load (tons/trip)} = \text{Maximum Weight of Vehicle (tons/trip)} + \text{Maximum Weight of Load (tons/trip)} \]

\[ \text{Annual Asphalt Production Limitation} = \frac{\text{Maximum Asphalt Cement/Binder Throughput} \times \text{Percent Asphalt Cement/Binder (weight %)}}{100} \]

\[ \text{Maximum Weight of Vehicle} (\text{tons}) = \text{Maximum Weight of Load (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Maximum Weight of Load (tons/trip)} = \text{Maximum Weight of Vehicle (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Maximum one-way distance (mi/trip)} = \frac{\text{Maximum one-way distance (feet/trip)}}{5280} \]

\[ \text{Maximum one-way miles (miles/yr)} = \frac{\text{Throughput (tons/yr)}}{\text{Maximum Weight of Load (tons/trip)}} \]

\[ \text{Maximum Weight driven per year (ton/yr)} = \text{Maximum Weight of Vehicle and Load (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Maximum Weight of Vehicle} (\text{tons/trip}) = \text{Maximum Weight of Vehicle (tons/trip)} + \text{Maximum Weight of Load (tons/trip)} \]

\[ \text{Maximum Weight of Load (tons/trip)} = \text{Maximum Weight of Vehicle (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Average Vehicle Weight Per Trip} = \frac{\text{Total Weight driven per year (ton/yr)}}{\text{Maximum trips per year (trip/yr)}} \]

\[ \text{PTE} = \frac{(\text{Maximum Weight of Vehicle} (\text{tons}) \times \text{Maximum Weight of Load (tons/trip)})}{\text{Maximum one-way distance (mi/trip)}} \]

\[ \text{Mitigated PTE} = \text{Maximum PTE} \times (1 - \text{Dust Control Efficiency}) \]

\[ \text{Average Miles Per Trip} = \frac{\text{Maximum one-way miles (miles/yr)}}{\text{Maximum trips per year (trip/yr)}} \]

\[ \text{Average Vehicle Weight Per Trip} = \frac{\text{Total Weight driven per year (ton/yr)}}{\text{Maximum trips per year (trip/yr)}} \]

\[ \text{Maximum Weight of Load (tons/trip)} = \text{Maximum Weight of Vehicle (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Maximum Weight driven per year (ton/yr)} = \text{Maximum Weight of Vehicle and Load (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Maximum one-way distance (mi/trip)} = \frac{\text{Maximum one-way distance (feet/trip)}}{5280} \]

\[ \text{Average Vehicle Weight Per Trip} = \frac{\text{Total Weight driven per year (ton/yr)}}{\text{Maximum trips per year (trip/yr)}} \]

\[ \text{Maximum one-way miles (miles/yr)} = \frac{\text{Throughput (tons/yr)}}{\text{Maximum Weight of Load (tons/trip)}} \]

\[ \text{Maximum Weight driven per year (ton/yr)} = \text{Maximum Weight of Vehicle and Load (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Maximum Weight of Vehicle} (\text{tons/trip}) = \text{Maximum Weight of Vehicle (tons/trip)} + \text{Maximum Weight of Load (tons/trip)} \]

\[ \text{Maximum Weight of Load (tons/trip)} = \text{Maximum Weight of Vehicle (tons/trip)} \times \text{Maximum trips per year (trip/yr)} \]

\[ \text{Average Vehicle Weight Per Trip} = \frac{\text{Total Weight driven per year (ton/yr)}}{\text{Maximum trips per year (trip/yr)}} \]

\[ \text{Maximum one-way distance (mi/trip)} = \frac{\text{Maximum one-way distance (feet/trip)}}{5280} \]

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\[ \text{Maximum one-way distance (mi/trip)} = \frac{\text{Maximum one-way distance (feet/trip)}}{5280} \]

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\[ \text{Average Vehicle Weight Per Trip} = \frac{\text{Total Weight driven per year (ton/yr)}}{\text{Maximum trips per year (trip/yr)}} \]
## Appendix A.2: Limited Emissions Summary

### Cold Mix Asphalt Production and Stockpiles

**Company Name:** Temple and Temple Excavating, Inc.  
**Source Address:** 114 Tarr Avenue, Salem, IN 47167  
**Permit Number:** F175-41089-00028  
**Reviewer:** Taylor Wade

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.

### Volatile Organic Compounds

<table>
<thead>
<tr>
<th>Volatile Organic Compound</th>
<th>Maximum weight % of VOC solvent in binder</th>
<th>Weight % VOC solvent in binder that evaporates</th>
<th>VOC Solvent Usage Limitation (tons/yr)</th>
<th>Limited PTE of VOC (tons/yr)</th>
<th>Liquid Binder Adjustment Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)</td>
<td>25.3%</td>
<td>95.0%</td>
<td>92.62</td>
<td>87.99</td>
<td>1.05</td>
</tr>
<tr>
<td>Cut back asphalt medium cure (assuming kerosene solvent)</td>
<td>28.6%</td>
<td>70.0%</td>
<td>125.70</td>
<td>87.99</td>
<td>1.43</td>
</tr>
<tr>
<td>Cut back asphalt slow cure (assuming fuel oil solvent)</td>
<td>20.0%</td>
<td>25.0%</td>
<td>351.97</td>
<td>87.99</td>
<td>4.00</td>
</tr>
<tr>
<td>Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)</td>
<td>15.0%</td>
<td>46.4%</td>
<td>189.64</td>
<td>87.99</td>
<td>2.16</td>
</tr>
<tr>
<td>Other asphalt with solvent binder</td>
<td>25.9%</td>
<td>2.5%</td>
<td>3519.73</td>
<td>87.99</td>
<td>40.0</td>
</tr>
</tbody>
</table>

### Worst Case Limited PTE of VOC = 87.99 tons/yr

### Hazardous Air Pollutants

| Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents* |
|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| Volatile Organic HAP | CAS# | Hazardous Air Pollutant (HAP) Content (% by weight)* | Gasoline | Kerosene | Diesel (#2) | Fuel Oil | No. 2 Fuel Oil | No. 6 Fuel Oil |
| 1,3-Butadiene | 106-99-0 | 3.70% | 5.00% | 2.90% | 1.10% | 0.30% |
| 2,2,4-Trimethylpentane | 124-38-1 | 2.40% | 3.00% | 1.80% | 0.50% | 0.15% |
| Acenaphthene | 83-32-9 | 4.70% | 6.00% | 3.20% | 1.60% | 0.40% |
| Acenaphthylene | 208-86-8 | 4.50% | 6.00% | 3.20% | 1.60% | 0.40% |
| Anthracene | 120-12-7 | 1.20% | 5.00% | 2.80% | 5.00% | 5.00% |
| Benzene | 71-43-2 | 1.90% | 2.90% | 1.80% | 5.00% |
| Benzo(a)anthracene | 56-55-3 | 9.60% | 4.50% | 5.50% |
| Benzo(a)pyrene | 50-32-8 | 2.20% | 2.10% | 4.40% |
| Benzo(g,h,i)perylene | 191-24-2 | 1.90% | 5.70% | 6.90% |
| Biphenyl | 92-52-4 | 6.30% | 7.20% |
| Chrysene | 218-01-9 | 4.50% | 1.40% | 6.80% |
| Ethylbenzene | 100-41-4 | 1.70% | 3.40% |
| Fluoranthene | 206-44-0 | 7.10% | 1.40% | 2.40% |
| Fluorene | 86-73-7 | 4.20% | 1.40% | 1.90% |
| Indeno(1,2,3-cd)pyrene | 195-39-5 | 1.60% | 1.00% |
| Methyl tert-butylether | 106-88-4 | 0.33% | |
| Naphthalene | 91-20-3 | 0.25% | 0.31% | 0.26% | 0.22% | 4.20% |
| n-Hexane | 110-63-3 | 2.40% | |
| Phenanthrene | 85-01-8 | 8.00% | 7.90% | 2.10% |
| Pyrene | 129-00-0 | 2.40% | 2.90% | 2.30% |
| Toluene | 108-86-3 | 8.10% | 6.20% |
| Total Xylenes | 1350-20-7 | 9.00% | |

### Total Organic HAPs

| Total Organic HAPs | 28.18% | 0.33% | 1.23% | 0.68% | 0.19% |

### Worst Single HAP

| Xylenes | 9.00% | 0.31% | 0.50% |
| Naphthalene | 0.23% |
| Xylenes | 0.07% |

### 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)]


### Abbreviations

VOC = Volatile Organic Compounds  
PTE = Potential to Emit
Appendix A.2: Limited Emissions Summary
Gasoline Fuel Transfer and Dispensing Operation

Company Name: Temple and Temple Excavating, Inc.
Source Address: 114 Tarr Avenue, Salem, IN 47167
Permit Number: F175-41089-00028
Reviewer: Taylor Wade

Gasoline Fuel Transfer and Dispensing Operation

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

Volatile Organic Compounds

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:

\[
\text{Gasoline Throughput} = \frac{\text{gallons/day}}{\text{kgal/yr}} = \frac{0}{0.0}
\]

Hazardous Air Pollutants

<table>
<thead>
<tr>
<th>Worst Case Total HAP Content of VOC solvent (weight %)* = 26.08%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worst Case Single HAP Content of VOC solvent (weight %)* = 9.0%</td>
</tr>
<tr>
<td>Xylenes</td>
</tr>
</tbody>
</table>

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.

\[
\text{Gasoline Throughput (kgal/yr)} = \left(\frac{\text{Gasoline Throughput (lbs/day)}}{\text{365 days/yr}}\right) \times \left(\frac{\text{kgal}}{1000 \text{ gal}}\right)
\]

\[
\text{PTE of VOC (tons/yr)} = \left(\frac{\text{Gasoline Throughput (kgal/yr)}}{\text{kgal/yr}}\right) \times \left(\frac{\text{Emission Factor (lb/kgal)}}{\text{ton/2000 lb}}\right)
\]

\[
\text{PTE of Total HAPs (tons/yr)} = \left(\frac{\text{Worst Case Total HAP Content of VOC solvent (weight %)}}{\text{ton}}\right) \times \left(\text{PTE of VOC (tons/yr)}\right)
\]

\[
\text{PTE of Single HAP (tons/yr)} = \left(\frac{\text{Worst Case Single HAP Content of VOC solvent (weight %)}}{\text{ton}}\right) \times \left(\text{PTE of VOC (tons/yr)}\right)
\]


Abbreviations

VOC = Volatile Organic Compounds
PTE = Potential to Emit
October 23, 2019

Ken Temple
Temple and Temple Excavating and Paving, Inc.
1367 S SR 60
Salem, IN 47167

Re: Public Notice
Temple and Temple Excavating and Paving, Inc.
Permit Level: FESOP Renewal
Permit Number: 175-41089-00028

Dear Mr. Temple:

Enclosed is a copy of your draft FESOP Renewal, Technical Support Document, emission calculations, and the Public Notice.

The Public Notice period will begin the date the Notice is published on the IDEM Official Public Notice website. Publication has been requested and is expected within 2-3 business days. You may check the exact Public Notice begins and ends date here: https://www.in.gov/idem/5474.htm

Please note that as of April 17, 2019, IDEM is no longer required to publish the notice in a newspaper.

OAQ has submitted the draft permit package to the Salem Public Library, 212 North Main Street in Salem, IN. 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 Taylor Wade, 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 3-0868 or dial (317) 233-0868.

Sincerely,

Theresa Weaver
Theresa Weaver
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover Letter 4/12/19
October 23, 2019

To: Salem Public Library

From: Jenny Acker, Branch Chief
Permits Branch
Office of Air Quality

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

Applicant Name: Temple and Temple Excavating and Paving, Inc.
Permit Number: 175-41089-00028

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
- 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 Smiddle-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 updated 4/2019
October 23, 2019
Temple and Temple Excavating and Paving, Inc.
175-41089-00028

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 posted on IDEM’s Public Notice website at https://www.in.gov/idem/5474.htm.

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 Letter 4/12/2019
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<th>Line</th>
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<th>Handing Charges</th>
<th>Act. Value (If Registered)</th>
<th>Insured Value</th>
<th>Due Send if COD</th>
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<td>Ken Temple  Temple and Temple Excavating and Paving Incorporated 1367 S SR 60 Salem IN 47167 (Source CAATS)</td>
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<td>Salem City Council and Mayors Office 38 Public Square Salem IN 47167 (Local Official)</td>
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<td>Salem Washington Twp Public Library 212 N Main St Salem IN 47167-2099 (Library)</td>
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<td>IMI 1501 W Market Street Salem IN 47167 (Affected Party)</td>
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</table>

**Mail Code 61-53**

**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

**AFFIX STAMP**
HERE IF USED AS CERTIFICATE OF MAILING

**Total number of pieces Listed by Sender**

**Total number of Pieces Received at Post Office**

**Postmaster, Per (Name of Receiving employee)**

The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50,000 per occurrence. The maximum indemnity payable on Express mail 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 insured and COD mail. See International Mail Manual for limitations of coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.