NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

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

for Calcar Quarry in Orange County

FESOP Renewal No.: F117-43007-03220

The Indiana Department of Environmental Management (IDEM) has received an application from Calcar Quarry located at 860 East US Highway 150, Paoli, IN 47454 for a renewal of its FESOP issued on March 29, 2011. If approved by IDEM’s Office of Air Quality (OAQ), this proposed renewal would allow Calcar Quarry 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 have been sent to:

Paoli Public Library
100 West Water Street
Paoli, IN 47454

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 application and preliminary findings is also available via IDEM’s Virtual File Cabinet (VFC). To access 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 F117-43007-03220 in all correspondence.

Comments should be sent to:

Dylan Finley
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for Dylan Finley or (317) 232-1139
Or dial directly: (317) 232-1139
Fax: (317) 232-6749 attn: Dylan Finley
E-mail: DFinley@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 and will also be sent to the local library indicated above, 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 Dylan Finley of my staff at the above address.

Madhurima D. Moulik, Ph.D., Section Chief
Permits Branch
Office of Air Quality
Federally Enforceable State Operating Permit Renewal

OFFICE OF AIR QUALITY

Calcar Quarry
860 East US Highway 150
Paoli, Indiana 47454

(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.

<table>
<thead>
<tr>
<th>Operation Permit No.: F117-43007-03220</th>
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<tbody>
<tr>
<td>Master Agency Interest ID: 50295</td>
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<table>
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<tr>
<th>Issued by:</th>
</tr>
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<tbody>
<tr>
<td>Madhurima D. Moulik, Ph.D., Section Chief</td>
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<tr>
<td>Permits Branch</td>
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<td>Office of Air Quality</td>
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<th>Issuance Date:</th>
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<td>Expiration Date:</td>
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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 batch plant and stone crushing operation.

<table>
<thead>
<tr>
<th>Source Address:</th>
<th>860 East US Highway 150, Paoli, Indiana 47454</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Source Phone Number:</td>
<td>812-723-2627</td>
</tr>
<tr>
<td>SIC Code:</td>
<td>2951 (Asphalt Paving Mixtures and Blocks)</td>
</tr>
<tr>
<td></td>
<td>1422 (Crushed and Broken Limestone)</td>
</tr>
<tr>
<td>County Location:</td>
<td>Orange</td>
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<tr>
<td>Source Location Status:</td>
<td>Attainment for all criteria pollutants</td>
</tr>
<tr>
<td>Source Status:</td>
<td>Federally Enforceable State Operating Permit Program</td>
</tr>
<tr>
<td></td>
<td>Minor Source, under PSD Rules</td>
</tr>
<tr>
<td></td>
<td>Minor Source, Section 112 of the Clean Air Act</td>
</tr>
<tr>
<td></td>
<td>Not 1 of 28 Source Categories</td>
</tr>
</tbody>
</table>

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

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

(a) One (1) batch hot-mix asphalt plant consisting of the following:

(1) One (1) aggregate dryer, identified as ID#3, constructed in 1958, with a maximum burner heat input capacity of fifty-one (51) million British thermal units (MMBtu) per hour firing natural gas fired burner, using #2 distillate fuel oil, No.4 distillate, No. 4, 5 or 6 residual fuel oil as backup fuels, exhausting through stack SV1.

(2) One (1) batch mixer, identified as ID#2, constructed in 1958, with a maximum throughput capacity of 120 tons per hour of raw material, equipped with one (1)cyclone, identified as ID#9, and a scrubber, identified as ID#11, for particulate control and exhausting through one (1) stack, identified as SV1.

Under 40 CFR 60, Subpart I, this hot mix asphalt plant is considered an affected facility.

(3) Material handling, screening and conveying operations, constructed in 1958, exhausting to the outside atmosphere, using dust control measures as necessary pursuant to the fugitive dust control plan, consisting of the following:

(A) Aggregate storage piles consisting of the following:

(i) One (1) #23 natural sand pile, pile size: 400 tons.

(ii) One (1) #24 crushed limestone pile, pile size: 100 tons.

(iii) One (1) #5 limestone pile, pile size: 200 tons.
(iv) One (1) #11f limestone pile, pile size: 400 tons.
(v) One (1) #11c limestone pile, pile size: 400 tons.
(vi) One (1) #8 limestone pile, pile size: 200 tons.

(B) One (1) silo, with 100 ton capacity (occasionally used for temporary hot mix storage).

(C) Six (6) cold feed bins (for aggregate going into batch plant), identified as ID#1CFB, #2CFB, #3CFB, #4CFB, #5CFB and #6CFB, each with a capacity of 30 tons.

(D) Two (2) flat conveyors, identified as #1FC and #2FC, each with a capacity of 70 tons per hour.

(E) One (1) screening system, identified as #1SS, with a capacity of 120 tons per hour.

(b) One (1) 1.0 million British Thermal Units (MMBtu) per hour hot oil heater firing natural gas as the primary fuel and #1 fuel oil as the backup fuel, and exhausting to stack SV1.

(c) Four (4) storage tanks, including:

1. One (1) 9,000 gallon storage tank, identified as ID#15A, installed prior to July 23, 1984, for liquid asphalt AC-20.
2. One (1) 11,000 gallon storage tank, identified as ID#15B, installed prior to July 23, 1984, for liquid asphalt AC-20.
3. One (1) 1,000 gallon storage tank, identified as ID #16, installed prior to July 23, 1984, for #1 fuel oil.
4. One (1) 8,000 gallon storage tank, identified as ID#14, installed prior to July 23, 1984, for either #2 fuel or waste oil.

(d) One (1) crushed stone operation, constructed in 1958, using dust control measures as necessary pursuant to the fugitive dust control plan, consisting of the following:

1. One (1) jaw crushe, identified as unit ID#1CR, installed in March 2010, capable of processing a maximum of 100 tons per hour of aggregate.
2. One (1) standard crushe, identified as unit ID#2CR, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.
3. One (1) standard crushe, identified as unit ID#3CR, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate.
4. One (1) short head crushe, identified as unit ID#4CR, installed in 1990, capable of processing a maximum of 100 tons per hour of aggregate.
5. Two (2) Secco screens, identified as units ID#1SC and ID#2SC, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate, each.
6. One (1) Conveying system consisting of:
(A) Twenty-one (21) belt conveyors, identified as units ID#1-16BC, #18BC, #19BC, #20BC, #23BC and #24BC, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.

(B) Three (3) radial stackers, identified as units ID#17RS, #21RS, and #22RS, installed in 2010, capable of processing a maximum of 100 tons per hour of aggregate.

Under NSPS Subpart OOO, the crushing operation is considered an affected facility.

(7) Aggregate storage piles consisting of the following:

   (A) One (1) #73 limestone pile, pile size: 3,000 tons.

   (B) One (1) #fill pile, pile size: 2,000 tons.

   (C) One (1) #53 limestone pile, pile size: 2,000 tons.

   (D) One (1) #24 crushed limestone pile, pile size: 2,000 tons.

   (E) One (1) #11f limestone pile, pile size: 1,000 tons.

   (F) One (1) #11c limestone pile, pile size: 200 tons.

   (G) One (1) #11b-borrow limestone pile, pile size: 500 tons.

   (H) One (1) #8 limestone pile, pile size: 2,000 tons.

   (e) One (1) #2 limestone pile, pile size: 2,000 tons.

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

This stationary source also includes the following insignificant activities:

(a) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such as filling of tanks, locomotives, automobiles, having storage capacity less than or equal to ten thousand five hundred (10,500) gallons;

Under 40 CFR 63, Subpart CCCCCC, the units comprising this operation are considered affected facilities.

(b) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu/hr and firing fuel containing less than five-tenths (0.5) percent;

   One (1) #1 fuel oil-fired combustion unit, for use as a backup system in place of the natural gas hot oil heater when fuel oil is the primary fuel and not natural gas.

(c) One (1) testing laboratory as defined in 326 IAC 2-7-1(20).

(d) Paved and unpaved roads and parking lots with public access, using dust control measures as necessary pursuant to the fugitive dust control plan.

(e) Drilling and blasting associated with the quarry operation.
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, F117-43007-03220, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

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

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

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

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

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

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

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

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.
B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

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

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

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

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

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

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

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

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

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

1. The appropriate identification of each term or condition of this permit that is the basis of the certification;

2. The compliance status;

3. Whether compliance was continuous or intermittent;

4. The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

5. Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

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

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

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

1. Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

2. A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

3. Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

1. Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

2. A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

3. Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

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

The Permittee shall implement the PMPs.

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

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

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

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

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

1. An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

2. The permitted facility was at the time being properly operated;

3. During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

4. For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ or 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
(C) Corrective actions taken.

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

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

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

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

(a) All terms and conditions of permits established prior to F117-43007-03220 and issued pursuant to permitting programs approved into the state implementation plan have been either:
(1) incorporated as originally stated,
(2) revised, or
(3) deleted.

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

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

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

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

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

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

(1) That this permit contains a material mistake.
(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

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

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

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

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

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

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source’s failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

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

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

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

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

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

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

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

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

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

and

United States Environmental Protection Agency, Region 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 317-233-8590 (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(c).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(d).
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) batch hot-mix asphalt plant consisting of the following:

1. One (1) aggregate dryer, identified as ID#3, constructed in 1958, with a maximum burner heat input capacity of fifty-one (51) million British thermal units (MMBtu) per hour firing natural gas fired burner, using #2 distillate fuel oil, No.4 distillate, No. 4, 5 or 6 residual fuel oil as backup fuels, exhausting through stack SV1.

2. One (1) batch mixer, identified as ID#2, constructed in 1958, with a maximum throughput capacity of 120 tons per hour of raw material, equipped with one (1) cyclone, identified as ID#9, and a scrubber, identified as ID#11, for particulate control and exhausting through one (1) stack, identified as SV1.

Under 40 CFR 60, Subpart I, this hot mix asphalt plant is considered an affected facility.

3. Material handling, screening and conveying operations, constructed in 1958, exhausting to the outside atmosphere, using dust control measures as necessary pursuant to the fugitive dust control plan, consisting of the following:

   **(A) Aggregate storage piles consisting of the following:**
   
   (i) One (1) #23 natural sand pile, pile size: 400 tons.

   (ii) One (1) #24 crushed limestone pile, pile size: 100 tons.

   (iii) One (1) #5 limestone pile, pile size: 200 tons.

   (iv) One (1) #11f limestone pile, pile size: 400 tons.

   (v) One (1) #11c limestone pile, pile size: 400 tons.

   (vi) One (1) #8 limestone pile, pile size: 200 tons.

   **(B) One (1) silo, with 100 ton capacity (occasionally used for temporary hot mix storage).**

   **(C) Six (6) cold feed bins (for aggregate going into batch plant), identified as ID#1CFB, #2CFB, #3CFB, #4CFB, #5CFB and #6CFB, each with a capacity of 30 tons.**

   **(D) Two (2) flat conveyors, identified as #1FC and #2FC, each with a capacity of 70 tons per hour.**

   **(E) One (1) screening system, identified as #1SS, with a capacity of 120 tons per hour.**

(b) One (1) 1.0 million British Thermal Units (MMBtu) per hour hot oil heater firing natural gas as the primary fuel and #1 fuel oil as the backup fuel, and exhausting to stack SV1.

(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 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

(a) The asphalt production rate shall not exceed 493,160 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) PM emissions from the dryer/mixer shall not exceed 0.738 pounds of PM per ton of asphalt produced.

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

D.1.2 FESOP and PSD 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 (PSD) not applicable, the Permittee shall not use slag and asphalt shingles as an aggregate additive in its hot-mix asphalt operations.

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

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

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

(a) The asphalt production rate shall not exceed 493,160 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) PM10 emissions from the dryer/mixer shall not exceed 0.303 pounds of PM10 per ton of asphalt produced.

(c) PM2.5 emissions from the dryer/mixer shall not exceed 0.319 pounds of PM2.5 per ton of asphalt produced.

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

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

D.1.4 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1][326 IAC 7-2-1]

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

(a) The sulfur dioxide (SO2) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per MMBtu when using distillate oil.

(b) The sulfur dioxide (SO2) emissions from the dryer/mixer burner shall not exceed one and six tenths (1.6) pounds per MMBtu heat input when using residual oil.
(c) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.5 Sulfur Dioxide (SO₂) Emissions [326 IAC 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

(a) The sulfur content of the No. 2, 4, 5 and 6 fuel oil shall not exceed 0.5 percent by weight.

(b) Single Fuel Usage Limitations

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

(1) Natural gas usage shall not exceed 447 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) No. 4 fuel oil usage shall not exceed 2,580,766 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) No. 2 fuel oil usage shall not exceed 2,726,161 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) No. 5 or 6 (residual) fuel oil usage shall not exceed 2,465,700 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) Multiple Fuel Usage Limitations

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner emissions from the dryer/mixer shall be limited as follows:

(1) SO2 emissions from the dryer/mixer shall not exceed 99 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

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

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

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

D.1.7 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Condition D.1.1(b), the Permittee shall perform PM testing of the dryer/mixer, utilizing methods approved by the Commissioner, at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.
(b) In order to demonstrate compliance with Conditions D.1.3(b) and D.1.3(c), the Permittee shall perform PM10 and PM2.5 testing on the dryer/mixer utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

D.1.8 Particulate Matter (PM and PM10) Control

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

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

D.1.9 Sulfur Dioxide Emissions and Sulfur Content

Compliance with the fuel limitations established in Conditions D.1.4(a) and D.1.4(b) - Sulfur Dioxide (SO\textsubscript{2}) shall be determined utilizing one of the following options:

(a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five tenths (0.5) pounds per million British thermal units heat input when combusting No. 2 distillate fuel oil, or one and six tenths (1.6) pounds per million British thermal units heat input when combusting No. 4 residual fuel oil, by:

(1) Providing vendor analysis of heat content and sulfur content of the fuel delivered, if accompanied by a vendor certification; or

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

(A) Fuel samples may be collected from the fuel tank immediately after the fuel tank is filled and before any fuel is combusted; and

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

(b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 51 MMBtu per hour burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

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

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, the Permittee shall use the following equation to determine the tons of SO\textsubscript{2} emitted per twelve (12) consecutive month period:
Sulfur Dioxide emission calculation

\[ S = G(E_G) + O(E_O) + F(E_F) + R(E_R) \]

\[ \text{2,000 lbs/ton} \]

Where:
- \( S \) = tons of sulfur dioxide emissions for twelve (12) month consecutive period
- \( G \) = million cubic feet of natural gas used in last twelve (12) months
- \( O \) = gallons of No. 4 fuel oil used in last twelve (12) months
- \( F \) = gallons of No. 2 fuel oil used in last twelve (12) months
- \( R \) = gallons of No. 5 and 6 fuel oil used in last twelve (12) months

Emission Factors:
- \( E_G = 0.6 \) pounds per million cubic feet of natural gas
- \( E_O = 75.00 \) lb/1000 gallons of No. 4 fuel oil
- \( E_F = 71.00 \) lb/1000 gallons of No. 2 fuel oil
- \( E_R = 78.5 \) lb/1000 gallon of No. 5 and 6 fuel oil

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

**D.1.10 Visible Emissions Notations**

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

**D.1.11 Parametric Monitoring**

The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer, at least once per day when the dryer/mixer is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for this unit is a pressure drop between five tenths (0.5) and six and five tenths (6.5) inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.
The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated or replaced at least once every six (6) months.

D.1.12 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 pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.1.13 Record Keeping Requirements

(a) To document the compliance status with Conditions D.1.1(a), and D.1.3(a), the Permittee shall keep monthly records of the amount of asphalt processed through the dryer/mixer.

(b) To document the compliance status with Conditions D.1.4 and D.1.5, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.4 and D.1.5.

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

(2) Actual fuel usage, sulfur content, and heat content, for each fuel used at the source since the last compliance determination period;

(3) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and

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

(i) Fuel supplier certifications;

(ii) The name of the fuel supplier; and

(iii) A statement from the fuel supplier that certifies the sulfur content of the No. 2 and No. 4 fuel oils.

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information
includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

(e) To document the compliance status with Condition D.1.10, the Permittee shall maintain records of visible emission notations of the dryer/mixer stack (SV1) exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(f) To document the compliance status with Condition D.1.11, the Permittee shall maintain records once per day of the pressure drop during normal operation. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

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

D.1.14 Reporting Requirements

(a) A quarterly summary of the information to document compliance status with Conditions D.1.1(a), D.1.3(a) and D.1.5 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
SECTION D.2  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(d) Crushed stone operation, constructed in 1958, using dust control measures as necessary pursuant to the fugitive dust control plan, consisting of:

(1) One (1) jaw crusher, identified as unit ID#1CR installed in March 2010, capable of processing a maximum of 100 tons per hour of aggregate.

(2) One (1) standard crusher, identified as unit ID#2CR, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.

(3) One (1) standard crusher, identified as unit ID#3CR, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate.

(4) One (1) short head crusher, identified as unit ID#4CR, installed in 1990, capable of processing a maximum of 100 tons per hour of aggregate.

(5) Two (2) Secco screens, identified as units ID#1SC and ID#2SC, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate, each.

(6) One (1) Conveying system consisting of:

(A) Twenty-one (21) belt conveyors, identified as units ID#1-16BC, #18BC, #19BC, #20BC, #23BC and #24BC, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.

(B) Three (3) radial stackers, identified as units ID#17RS, #21RS, and #22RS, installed in 2010, capable of processing a maximum of 100 tons per hour of aggregate.

Under NSPS Subpart OOO, the crushing operation is considered an affected facility.

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

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

D.2.1 PSD Minor Limit [326 IAC 2-2]

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

(a) The annual throughput of the crushed stone processing operation shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM emissions from each crusher shall not exceed 0.0054 pound of PM per ton of stone crushed.

(c) PM emissions from each screen shall not exceed 0.025 pound of PM per ton of stone screened.

(d) PM emissions from each conveyor shall not exceed 0.003 pound of PM per ton of stone conveyed.
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 PM to less than 250 tons per twelve (12) consecutive month period and shall render requirements of 326 IAC 2-2 (PSD) not applicable.

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

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

(a) The annual throughput of the crushed stone processing operation shall not exceed 1,000,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM10 emissions from each crusher shall not exceed 0.0024 pounds of PM10 per ton of stone crushed.

(c) PM10 emissions from each screen shall not exceed 0.0087 pounds of PM10 per ton of stone screened.

(d) PM10 emissions from each conveyor shall not exceed 0.0011 pounds of PM10 per ton of stone conveyed.

(e) PM2.5 emissions from each crusher shall not exceed 0.0024 pounds of PM2.5 per ton of stone crushed.

(f) PM2.5 emissions from each screen shall not exceed 0.0087 pounds of PM2.5 per ton of stone screened.

(g) PM2.5 emissions from each conveyor shall not exceed 0.0011 pounds of PM2.5 per ton of stone conveyed.

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

D.2.3 Particulate [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of the following operations shall not exceed the pound per hour limits listed in the table below:

<table>
<thead>
<tr>
<th>Unit ID</th>
<th>Emission Unit Description</th>
<th>Max. Throughput Rate (tons/hr)</th>
<th>Particulate Emission Limit (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ID#1SC)</td>
<td>secco screen</td>
<td>100</td>
<td>51.28</td>
</tr>
<tr>
<td>(ID#2SC)</td>
<td>secco screen</td>
<td>100</td>
<td>51.28</td>
</tr>
</tbody>
</table>

The pounds per hour limitations were calculated using the following equations:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

\[ E = 4.10 \ P^{0.67} \]

where \( E \) = rate of emission in pounds per hour; and \( P \) = process weight rate in tons per hour
Interpolation and extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by use of the equation:

\[ E = 55.0 \ P^{0.11} - 40 \]

where \( E \) = rate of emission in pounds per hour; and
\( P \) = process weight rate in tons per hour

D.2.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

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

D.2.5 Particulate Control

In order to comply with Conditions D.2.1 and D.2.2, the Permittee shall use a wet process or continuous wet suppressions at all times that the crushed stone operation is in operation.

Record Keeping and Reporting Requirement [326 IAC 2-8-3][326 IAC 2-8-16]

D.2.6 Record Keeping Requirements

(a) To document the compliance status with Conditions D.2.1 and D.2.2 the Permittee shall maintain monthly records of the amount of material processed through the stone crushing plant.

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

D.2.7 Reporting Requirements

A quarterly summary of the information to document compliance status with Conditions D.2.1 and 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 submitted by the Permittee does require a certification that meet the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
SECTION E.1 NSPS

Emissions Unit Description:

(a) One (1) batch hot-mix asphalt plant consisting of the following:

(1) One (1) aggregate dryer, identified as ID#3, constructed in 1958, with a maximum burner heat input capacity of fifty-one (51) million British thermal units (MMBtu) per hour firing natural gas fired burner, using #2 distillate fuel oil, No.4 distillate, No. 4, 5 or 6 residual fuel oil as backup fuels, exhausting through stack SV1.

(2) One (1) batch mixer, identified as ID#2, constructed in 1958, with a maximum throughput capacity of 120 tons per hour of raw material, equipped with one (1) cyclone, identified as ID#9, and a scrubber, identified as ID#11, for particulate control and exhausting through one (1) stack, identified as SV1.

Under 40 CFR 60, Subpart I, this hot mix asphalt plant is considered an affected facility.

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

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


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

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

E.1.2 New Source Performance Standards (NSPS) for Hot Mix Asphalt Facilities 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
**Emissions Unit Description:**

(d) One (1) crushed stone operation, constructed in 1958, using dust control measures as necessary pursuant to the fugitive dust control plant, consisting of the following:

1. One (1) jaw crusher, identified as unit ID#1CR, installed in March 2010, capable of processing a maximum of 100 tons per hour of aggregate.
2. One (1) standard crusher, identified as unit ID#2CR, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.
3. One (1) standard crusher, identified as unit ID#3CR, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate.
4. One (1) short head crusher, identified as unit ID#4CR, installed in 1990, capable of processing a maximum of 100 tons per hour of aggregate.
5. Two (2) Secco screens, identified as units ID#1SC and ID#2SC, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate, each.
6. One (1) Conveying system consisting of:
   - Twenty-one (21) belt conveyors, identified as units ID#1-16BC, #18BC, #19BC, #20BC, #23BC and #24BC, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.
   - Three (3) radial stackers, identified as units ID#17RS, #21RS, and #22RS, installed in 2010, capable of processing a maximum of 100 tons per hour of aggregate.

Under NSPS Subpart OOO, the crushing operation is considered an affected facility.

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

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


(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 OOO.

(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.2.2 New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants NSPS
[326 IAC 12][40 CFR Part 60, Subpart OOO]

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

(1) 40 CFR 60.670(a), (d), (e), and (f)
(2) 40 CFR 60.671
(3) 40 CFR 60.672(b), (d), and (e)
(4) 40 CFR 60.673
(5) 40 CFR 60.675(a), (c)(1)(i), (ii), (iii), (c)(3), (d), (e), (g), and (i)
(6) 40 CFR 60.676(a), (b)(1), (f), (h), (i), (j), and (k)
(7) Table 1 and Table 3

Note: The jaw crusher, identified as unit ID#1CR, that was installed in March 2010, is exempt
from the requirements of 40 CFR 60.672, 40 CFR 60.674, and 40 CFR 60.675.
SECTION E.3 NESHAP

Emissions Unit Description:

(a) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such as filling of tanks, locomotives, automobiles, having storage capacity less than or equal to ten thousand five hundred (10,500) gallons;

Under 40 CFR 63, Subpart CCCCCC, the units comprising this operation are considered affected facilities.

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

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

E.3.1 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-8-4(1)]


(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart CCCCCC.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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


The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart CCCCCC (included as Attachment D to the operating permit), which are incorporated by reference as 326 IAC 20-1 for the emission unit(s) listed above:

(1) 40 CFR 63. 11110
(2) 40 CFR 63. 11111(a)(b)(e)(f)
(3) 40 CFR 63. 11112(a)(d)
(4) 40 CFR 63. 11113(b)(c)
(5) 40 CFR 63. 11116
(6) 40 CFR 63. 11130
(7) 40 CFR 63. 11131
(8) 40 CFR 63. 11132
(9) Table 3
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
CERTIFICATION

Source Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
FESOP Permit No.: F117-43007-03220

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

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify) _____________________________________________________________

☐ Report (specify) ________________________________________________________________

☐ Notification (specify) ____________________________________________________________

☐ Affidavit (specify) ______________________________________________________________

☐ Other (specify) ________________________________________________________________

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

Signature:
Printed Name:
Title/Position:
Date:
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
FESOP Permit No.: F117-43007-03220

This form consists of 2 pages
Page 1 of 2

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

If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: ________________________________
Title / Position: ________________________________
Date: ________________________________
Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  

FESOP Quarterly Report

<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>Throughput (tons)</td>
<td>Throughput (tons)</td>
<td>Throughput (tons)</td>
</tr>
<tr>
<td>This Month</td>
<td>Previous 11 Months</td>
<td>12 Month Total</td>
<td></td>
</tr>
<tr>
<td>Month 1</td>
<td></td>
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</tr>
<tr>
<td>Month 2</td>
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</tr>
<tr>
<td>Month 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</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: _________________________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  

FESOP Quarterly Report  

Source Name: Calcar Quarry  
Source Address: 860 East US Highway 150, Paoli, Indiana 47454  
FESOP Permit No.: F117-43007-03220  
Facility: Drum dryer/mixer  
Parameter: Hot mix asphalt production  
Limit: The asphalt production rate shall not exceed 493,160 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

<table>
<thead>
<tr>
<th>QUARTER:</th>
<th>YEAR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month 1</td>
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</tr>
<tr>
<td>Month 2</td>
<td></td>
</tr>
<tr>
<td>Month 3</td>
<td></td>
</tr>
</tbody>
</table>

![Table of Hot Mix Asphalt Production](image)

- □ 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: Calcar Quarry  
Source Address: 860 East US Highway 150, Paoli, Indiana 47454  
FESOP Permit No.: F117-43007-03220  
Facility: Dryer/Mixer Burner  
Parameter: Single fuel usage  
Limit: When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner the usage of fuel shall be limited as follows:

<table>
<thead>
<tr>
<th>Fuel Type (units)</th>
<th>Fuel Usage Limit (per 12 consecutive month period)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas (million cubic feet)</td>
<td>447</td>
</tr>
<tr>
<td>No. 4 fuel oil (gallons)</td>
<td>2,580,766</td>
</tr>
<tr>
<td>No. 2 fuel oil (gallons)</td>
<td>2,736,161</td>
</tr>
<tr>
<td>Residual No. 5 or 6 (gallons)</td>
<td>2,465,700</td>
</tr>
</tbody>
</table>

**QUARTER: _______________________  YEAR: _______________________**

<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>Fuel Usage (gallons/mmCF)</td>
<td>Fuel Usage (gallons/mmCF)</td>
<td>Fuel Usage (gallons/mmCF)</td>
</tr>
<tr>
<td></td>
<td>This Month</td>
<td>Previous 11 Months</td>
<td>12 Month Total</td>
</tr>
</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: _________________________________________________________________
**Indiana Department of Environmental Management**

**Office of Air Quality**

**Compliance and Enforcement Branch**

**FESOP Quarterly Report**

---

**Source Name:** Calcar Quarry  
**Source Address:** 860 East US Highway 150, Paoli, Indiana 47454  
**FESOP Permit No.:** F117-43007-03220  
**Facility:** Dryer/Mixer Burner  
**Parameter:** Multiple fuel usage / Sulfur dioxide (SO2) emissions  
**Limit:** SO2 emissions from the dryer/mixer shall not exceed 99 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, the Permittee shall use the following equation to determine the tons of SO2 emitted per twelve (12) consecutive month period:

\[
S = \frac{G(E_G) + O(E_O) + F(E_F) + R(E_R)}{2,000 \text{ lbs/ton}}
\]

**Where:**  
- \(S\) = tons of sulfur dioxide emissions for twelve (12) month consecutive period  
- \(G\) = million cubic feet of natural gas used in last twelve (12) months  
- \(O\) = gallons of No. 4 fuel oil used in last twelve (12) months  
- \(F\) = gallons of No. 2 fuel oil used in last twelve (12) months  
- \(R\) = gallons of No. 5 and 6 fuel oil used in last twelve (12) months  

**Emission Factors:**  
- \(E_G = 0.6\) pounds per million cubic feet of natural gas  
- \(E_O = 71.0\) lb/1000 gallon of No. 4 fuel oil  
- \(E_F = 71.00\) lb/1000 gallons of No. 2 fuel oil  
- \(E_R = 78.6\) lb/1000 gallon of No. 5 or 6 fuel oil
FESOP Fuel Usage and SO2 Emissions Quarterly Reporting Form

<table>
<thead>
<tr>
<th>QUARTER:</th>
<th>YEAR:</th>
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<table>
<thead>
<tr>
<th>Month</th>
<th>Fuel Types/Slag (Units)</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 1 + Column 2</th>
<th>Total SO2 Emissions From All Fuels Used (tons per 12 month consecutive period)</th>
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<tbody>
<tr>
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<td>Usage This Month</td>
<td>Usage Previous 11 Months</td>
<td>Usage 12 Month Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month 1</td>
<td>Natural gas (mmcf)</td>
<td>No. 4 fuel oil (gallons)</td>
<td>No. 2 fuel oil (gallons)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month 2</td>
<td>No. 5 and 6 fuel oil (gallons)</td>
<td>Natural gas (mmcf)</td>
<td>No. 4 fuel oil (gallons)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month 3</td>
<td>No. 2 fuel oil (gallons)</td>
<td>No. 5 and 6 fuel oil (gallons)</td>
<td>Natural gas (mmcf)</td>
<td></td>
<td></td>
</tr>
</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: ___________________________________________________________
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: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
FESOP Permit No.: F117-43007-03220

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

Form Completed by: _______________________________________________________

Title / Position: ___________________________________________________________

Date: ___________________________________________________________________

Phone: _________________________________________________________________
Appendix A

CALCAR QUARRY
860 East US Highway 150
Paoli, Indiana  47454

Permit No. F117-43007-03220
APPENDIX A

Fugitive Dust Plan for the Asphalt Plant and Crushed Stone (Aggregate) Plant

A. Asphalt Plant

1. General
   a. The materials used in the asphalt plant that are most likely to cause the plant to emit fugitive dust are crushed limestone and natural sand.
   b. This material is stockpiled on-site and transported on a solid limestone floor by a front-end loader from the stockpile to the loading bins of the asphalt plant.
   c. The asphalt plant and stockpile area are located within a quarry pit.
      i. The plant and stockpile area are bounded to the North by an eighty-feet high limestone wall and to the East, West, and South by forty-feet high limestone walls.
      ii. These terrain features will contain the vast majority of fugitive dust that might escape the asphalt plant.
      iii. The contained fugitive dust will most likely fall within the plant and stockpile area.

2. Monitoring
   a. The asphalt plant operator, the front-end loader operator, and the plant foreman are responsible to work together in monitoring the asphalt plant for fugitive dust emissions.
      i. Asphalt Plant Operator
         (1) will monitor the area of the drum drier and the burner of the asphalt plant for fugitive dust emissions;
         (2) will monitor the baghouse for proper operation.
      ii. Front-End Loader Operator
         (1) will monitor the haul roads in the stockpile area for fugitive dust emissions;
         (2) will monitor area near the asphalt plant loading bins for fugitive dust emissions.
      iii. Plant Foreman
         (1) will monitor the elevator tower and screening area of the asphalt plant for fugitive dust emissions;
         (2) will monitor asphalt truck approach roads for fugitive dust emissions.
   b. Monitoring will consist of routine observation of each person’s area of responsibility for unusual or unusually high dust emissions that poses a threat to leave the property boundaries of the plant area.

3. Standard Preventive Measures
   a. Asphalt Plant Operator
      i. will operate the baghouse at all times that the asphalt plant is in operation.
      ii. will return dust captured in the baghouse to the hot-mix according to the job mix formula or to the degree possible while still providing a quality product for the customer.
b. Front-End Loader Operator
   i. will empty the baghouse discharge truck when full to prevent spillage.

c. Plant Foreman
   i. will ensure that haul roads in the area of the asphalt plant are properly dampened so as to minimize airborne dust generation by vehicles.

4. Corrective Actions.
   a. Asphalt Plant Operator
      i. If excessive fugitive dust is observed in the area of the drum drier or burner, check the baghouse for proper operation and adjust accordingly until the dust is under control.
      ii. If the baghouse fails to function properly, discontinue plant operations until the problem is fixed and the baghouse is fully operational.
      iii. Report all corrective actions to the plant foreman
   b. Front-End Loader Operator
      i. If fugitive dust is observed on the haul roads or the area of the asphalt plant loading bins, notify the plant foreman immediately so that he may direct the water truck to dampen the roads appropriately.
      ii. If the discharge truck becomes full, notify the asphalt plant operator, discontinue loading the asphalt plant, and unload the discharge truck.
      iii. Report all corrective actions to the plant foreman.
   c. Plant Foreman
      i. If fugitive dust is observed in the elevator tower or the screening area of the asphalt plant, notify the asphalt plant operator to check for proper operation of the baghouse.
      ii. If fugitive dust is observed on the asphalt truck approach roads or any of the haul roads, increase the frequency of the water truck passes to increase the moisture in the road surface material.
      iii. Report all corrective actions to the plant manager.

5. Emergency Situations
   a. All
      i. In the event that any of the corrective actions fail to reduce fugitive dust to the degree that escape of the fugitive dust from the plant property is imminent, notify the asphalt plant operator, the plant foreman, and the plant manager.
   b. Asphalt Plant Operator
      i. Discontinue operations until the fugitive dust emissions are under control and the threat of the dust leaving the property is minimized.
(B) Crushed Stone (Aggregate) Plant

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

(1) Unpaved roads and parking lots:
   (A) treating with water on an as needed basis

(b) Fugitive particulate matter (dust) emissions from material (gravel, sand, slag, limestone, and/or recycled asphalt pavement (RAP)) storage piles shall be controlled by one or more of the following measures on an as needed basis:

(1) maintaining minimum size and number of storage piles;
(2) treating around the storage pile area with water on an as needed basis; and/or
(3) treating the storage piles with water on an as needed basis.

(c) Fugitive particulate matter (dust) emissions from the transferring of materials (gravel, sand, slag, limestone, and/or recycled asphalt pavement (RAP)) shall be controlled by one of the following measures on an as needed basis:

(1) locating storage piles as close as possible to feed bins;
(2) limiting transfer points to three foot drops or less.
(3) applying water to the materials on an as needed basis.

(d) Fugitive particulate matter (dust) emissions from transporting of materials (gravel, sand, slag, limestone, and/or recycled asphalt pavement (RAP)) shall be controlled by one of the following measures on an as needed basis:

(1) tarping the materials hauling vehicles;
(2) insuring tailgates are tight and do not leak;
(3) applying water to the materials on an as needed basis; and/or
(4) maintaining a 10 MPH speed limit in the yard.

(e) Fugitive particulate matter (dust) emissions from the loading and unloading of materials (gravel, sand, slag, limestone, and/or recycled asphalt pavement (RAP)) shall be controlled by one of the following measures on an as needed basis:

(1) limiting free fall distance;
(2) limiting the rate of discharge of the materials; and/or
(3) applying water to the materials on an as needed basis.

(f) Fugitive particulate matter (dust) emissions from material (gravel, sand, slag, limestone, and/or recycled asphalt pavement (RAP)) feed bins, conveyors, transfer points, screens, and/or crushers shall be controlled by the following measure on an as needed basis:

(1) limiting transfer points to three foot drops or less.
(2) enclosing the conveyors, transfer points, screens, and/or crushers; and/or
(3) applying water to the materials on an as needed basis.
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.

[51 FR 12325, Apr. 10, 1986]

§ 60.92   Standard for particulate matter.

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

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

(2) Exhibit 20 percent opacity, or greater.

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

§ 60.93   Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).
(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.92 as follows:

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

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

[54 FR 6667, Feb. 14, 1989]
Attachment C
Federally Enforceable State Operating Permit (FESOP) No: F117-43007-02330

Electronic Code of Federal Regulations
Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

Source: 74 FR 19309, Apr. 28, 2009, unless otherwise noted.

§ 60.670 Applicability and designation of affected facility.

(a)(1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.

(2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; plants without crushers or grinding mills above ground; and wet material processing operations (as defined in § 60.671).

(b) An affected facility that is subject to the provisions of subparts F or I of this part or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.

(c) Facilities at the following plants are not subject to the provisions of this subpart:

(1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 23 megagrams per hour (25 tons per hour) or less;

(2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 136 megagrams per hour (150 tons per hour) or less; and

(3) Common clay plants and pumice plants with capacities, as defined in § 60.671, of 9 megagrams per hour (10 tons per hour) or less.

(d)(1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in § 60.671, having the same function as the existing facility, and there is no increase in the amount of emissions, the new facility is exempt from the provisions of §§ 60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.

(2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in § 60.676(a).

(3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§ 60.672, 60.674 and 60.675.

(e) An affected facility under paragraph (a) of this section that commences construction, modification, or reconstruction after August 31, 1983, is subject to the requirements of this part.
(f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that do not apply to owners and operators of affected facilities subject to this subpart or that apply with certain exceptions.

§ 60.671  Definitions.

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

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

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

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

Building means any frame structure with a roof.

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

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

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

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

Crush or Crushing means to reduce the size of nonmetallic mineral material by means of physical impaction of the crusher or grinding mill upon the material.

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

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

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

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

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

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

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals:
(1) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.

(2) Sand and Gravel.

(3) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.

(4) Rock Salt.

(5) Gypsum (natural or synthetic).

(6) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.

(7) Pumice.

(8) Gilsonite.

(9) Talc and Pyrophyllite.

(10) Boron, including Borax, Kernite, and Colemanite.

(11) Barite.

(12) Fluorospar.

(13) Feldspar.

(14) Diatomite.

(15) Perlite.

(16) Vermiculite.

(17) Mica.

(18) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

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

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

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

Saturated material means, for purposes of this subpart, mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket
elevators and belt conveyors. Material that is wetted solely by wet suppression systems is not considered to be “saturated” for purposes of this definition.

**Screening operation** means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens). Grizzly feeders associated with truck dumping and static (non-moving) grizzlies used anywhere in the nonmetallic mineral processing plant are not considered to be screening operations.

**Seasonal shut down** means shut down of an affected facility for a period of at least 45 consecutive days due to weather or seasonal market conditions.

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

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

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

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

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

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

**Wet material processing operation(s)** means any of the following:

1. Wet screening operations (as defined in this section) and subsequent screening operations, bucket elevators and belt conveyors in the production line that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line; or

2. Screening operations, bucket elevators and belt conveyors in the production line downstream of wet mining operations (as defined in this section) that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line.

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

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

§ 60.672 Standard for particulate matter (PM).

(a) Affected facilities must meet the stack emission limits and compliance requirements in Table 2 of this subpart within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.8. The requirements in Table 2 of this subpart apply for affected facilities with capture systems used to capture and transport particulate matter to a control device.
(b) Affected facilities must meet the fugitive emission limits and compliance requirements in Table 3 of this subpart within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.11. The requirements in Table 3 of this subpart apply for fugitive emissions from affected facilities without capture systems and for fugitive emissions escaping capture systems.

(c) [Reserved]

d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

(e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a) and (b) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:

(1) Fugitive emissions from the building openings (except for vents as defined in § 60.671) must not exceed 7 percent opacity; and

(2) Vents (as defined in § 60.671) in the building must meet the applicable stack emission limits and compliance requirements in Table 2 of this subpart.

(f) Any baghouse that controls emissions from only an individual, enclosed storage bin is exempt from the applicable stack PM concentration limit (and associated performance testing) in Table 2 of this subpart but must meet the applicable stack opacity limit and compliance requirements in Table 2 of this subpart. This exemption from the stack PM concentration limit does not apply for multiple storage bins with combined stack emissions.

§ 60.673 Reconstruction.

(a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital cost that would be required to construct a comparable new facility” under § 60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.

(b) Under § 60.15, the “fixed capital cost of the new components” includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

§ 60.674 Monitoring of operations.

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

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

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

(b) The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under § 60.676(b).
(1) If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility is exempt from the 5-year repeat testing requirement specified in Table 3 of this subpart provided that the affected facility meets the criteria in paragraphs (b)(1)(i) and (ii) of this section:

(i) The owner or operator of the affected facility conducts periodic inspections of the upstream water spray(s) that are responsible for controlling fugitive emissions from the affected facility. These inspections are conducted according to paragraph (b) of this section and § 60.676(b), and

(ii) The owner or operator of the affected facility designates which upstream water spray(s) will be periodically inspected at the time of the initial performance test required under § 60.11 of this part and § 60.675 of this subpart.

(2) If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than water sprays during the monthly inspection (for example, water from recent rainfall), the logbook entry required under § 60.676(b) must specify the control mechanism being used instead of the water sprays.

(c) Except as specified in paragraph (d) or (e) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions must conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, Appendix A-7). The Method 22 (40 CFR part 60, Appendix A-7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation. The owner or operator must record each Method 22 (40 CFR part 60, Appendix A-7) test, including the date and any corrective actions taken, in the logbook required under § 60.676(b). The owner or operator of the affected facility may establish a different baghouse-specific success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test according to § 60.675(b) simultaneously with a Method 22 (40 CFR part 60, Appendix A-7) to determine what constitutes normal visible emissions from that affected facility's baghouse when it is in compliance with the applicable PM concentration limit in Table 2 of this subpart. The revised visible emissions success level must be incorporated into the permit for the affected facility.

(d) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A-7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions may use a bag leak detection system. The owner or operator must install, operate, and maintain the bag leak detection system according to paragraphs (d)(1) through (3) of this section.

(1) Each bag leak detection system must meet the specifications and requirements in paragraphs (d)(1)(i) through (viii) of this section.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.

(ii) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

(iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (d)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

(v) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (d)(1)(vi) of this section.
(vi) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (d)(2) of this section.

(vii) The owner or operator must install the bag leak detection sensor downstream of the fabric filter.

(viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(2) The owner or operator of the affected facility must develop and submit to the Administrator or delegated authority for approval of a site-specific monitoring plan for each bag leak detection system. The owner or operator must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (d)(2)(i) through (vi) of this section.

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system, including quality assurance procedures;

(iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(v) How the bag leak detection system output will be recorded and stored; and

(vi) Corrective action procedures as specified in paragraph (d)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(3) For each bag leak detection system, the owner or operator must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (d)(2)(vi) of this section, the owner or operator must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions;

(ii) Sealing off defective bags or filter media;

(iii) Replacing defective bags or filter media or otherwise repairing the control device;

(iv) Sealing off a defective fabric filter compartment;

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or

(vi) Shutting down the process producing the PM emissions.

(e) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A-7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility that is subject to the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) may follow the continuous compliance requirements in row 1 items (i) through (iii) of Table 6 to Subpart AAAAA of 40 CFR part 63.
§ 60.675 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendices A-1 through A-7 of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.

(b) The owner or operator shall determine compliance with the PM standards in § 60.672(a) as follows:

(1) Except as specified in paragraphs (e)(3) and (4) of this section, Method 5 of Appendix A-3 of this part or Method 17 of Appendix A-6 of this part shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, Appendix A-3), if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.

(2) Method 9 of Appendix A-4 of this part and the procedures in § 60.11 shall be used to determine opacity.

(c)(1) In determining compliance with the particulate matter standards in § 60.672(b) or § 60.672(e)(1), the owner or operator shall use Method 9 of Appendix A-4 of this part and the procedures in § 60.11, with the following additions:

(i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9 of Appendix A-4 of this part, Section 2.1) must be followed.

(iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

(2)(i) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under § 60.672(f) of this subpart, using Method 9 (40 CFR part 60, Appendix A-4), the duration of the Method 9 (40 CFR part 60, Appendix A-4) observations shall be 1 hour (ten 6-minute averages).

(ii) The duration of the Method 9 (40 CFR part 60, Appendix A-4) observations may be reduced to the duration the affected facility operates (but not less than 30 minutes) for baghouses that control storage bins or enclosed truck or railcar loading stations that operate for less than 1 hour at a time.

(3) When determining compliance with the fugitive emissions standard for any affected facility described under § 60.672(b) or § 60.672(e)(1) of this subpart, the duration of the Method 9 (40 CFR part 60, Appendix A-4) observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limits in Table 3 of this subpart must be based on the average of the five 6-minute averages.

(d) To demonstrate compliance with the fugitive emission limits for buildings specified in § 60.672(e)(1), the owner or operator must complete the testing specified in paragraph (d)(1) and (2) of this section. Performance tests must be conducted while all affected facilities inside the building are operating.

(1) If the building encloses any affected facility that commences construction, modification, or reconstruction on or after April 22, 2008, the owner or operator of the affected facility must conduct an initial Method 9 (40 CFR part 60, Appendix A-4) performance test according to this section and § 60.11.

(2) If the building encloses only affected facilities that commenced construction, modification, or reconstruction before April 22, 2008, and the owner or operator has previously conducted an initial Method 22 (40 CFR part 60, Appendix A-7) performance test showing zero visible emissions, then the owner or operator has demonstrated compliance with
the opacity limit in § 60.672(e)(1). If the owner or operator has not conducted an initial performance test for the building before April 22, 2008, then the owner or operator must conduct an initial Method 9 (40 CFR part 60, Appendix A-4) performance test according to this section and § 60.11 to show compliance with the opacity limit in § 60.672(e)(1).

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

(i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.

(2) A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met:

(i) No more than three emission points may be read concurrently.

(ii) All three emission points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.

(iii) If an opacity reading for any one of the three emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two points and continue reading just that single point.

(3) Method 5I of Appendix A-3 of this part may be used to determine the PM concentration as an alternative to the methods specified in paragraph (b)(1) of this section. Method 5I (40 CFR part 60, Appendix A-3) may be useful for affected facilities that operate for less than 1 hour at a time such as (but not limited to) storage bins or enclosed truck or railcar loading stations.

(4) In some cases, velocities of exhaust gases from building vents may be too low to measure accurately with the type S pitot tube specified in EPA Method 2 of Appendix A-1 of this part [i.e., velocity head <1.3 mm H2O (0.05 in. H2O)] and referred to in EPA Method 5 of Appendix A-3 of this part. For these conditions, the owner or operator may determine the average gas flow rate produced by the power fans (e.g., from vendor-supplied fan curves) to the building vent. The owner or operator may calculate the average gas velocity at the building vent measurement site using Equation 1 of this section and use this average velocity in determining and maintaining isokinetic sampling rates.

\[ v_e = \frac{Q_f}{A_e} \] (Eq. 1)

Where:

\[ V_e = \text{average building vent velocity (feet per minute)}; \]

\[ Q_f = \text{average fan flow rate (cubic feet per minute)}; \text{ and} \]

\[ A_e = \text{area of building vent and measurement location (square feet)}. \]

(f) To comply with § 60.676(d), the owner or operator shall record the measurements as required in § 60.676(c) using the monitoring devices in § 60.674(a)(1) and (2) during each particulate matter run and shall determine the averages.
(g) For performance tests involving only Method 9 (40 CFR part 60 Appendix A-4) testing, the owner or operator may reduce the 30-day advance notification of performance test in § 60.7(a)(6) and 60.8(d) to a 7-day advance notification.

(h) [Reserved]

(i) If the initial performance test date for an affected facility falls during a seasonal shut down (as defined in § 60.671 of this subpart) of the affected facility, then with approval from the permitting authority, the owner or operator may postpone the initial performance test until no later than 60 calendar days after resuming operation of the affected facility.

§ 60.676 Reporting and recordkeeping.

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

(1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

(i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and

(ii) The rated capacity in tons per hour of the replacement equipment.

(2) For a screening operation:

(i) The total surface area of the top screen of the existing screening operation being replaced and

(ii) The total surface area of the top screen of the replacement screening operation.

(3) For a conveyor belt:

(i) The width of the existing belt being replaced and

(ii) The width of the replacement conveyor belt.

(4) For a storage bin:

(i) The rated capacity in megagrams or tons of the existing storage bin being replaced and

(ii) The rated capacity in megagrams or tons of replacement storage bins.

(b)(1) Owners or operators of affected facilities (as defined in §§ 60.670 and 60.671) for which construction, modification, or reconstruction commenced on or after April 22, 2008, must record each periodic inspection required under § 60.674(b) or (c), including dates and any corrective actions taken, in a logbook (in written or electronic format). The owner or operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Administrator upon request.

(2) For each bag leak detection system installed and operated according to § 60.674(d), the owner or operator must keep the records specified in paragraphs (b)(2)(i) through (iii) of this section.

(i) Records of the bag leak detection system output;

(ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and
(iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.

(3) The owner or operator of each affected facility demonstrating compliance according to § 60.674(e) by following the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) must maintain records of visible emissions observations required by § 63.7132(a)(3) and (b) of 40 CFR part 63, subpart AAAAA.

(c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss and liquid flow rate decrease by more than 30 percent from the average determined during the most recent performance test.

(e) The reports required under paragraph (d) of this section shall be postmarked within 30 days following end of the second and fourth calendar quarters.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in § 60.672 of this subpart, including reports of opacity observations made using Method 9 (40 CFR part 60, Appendix A-4) to demonstrate compliance with § 60.672(b), (e) and (f).

(g) The owner or operator of any wet material processing operation that processes saturated and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. At the time of such change, this screening operation, bucket elevator, or belt conveyor becomes subject to the applicable opacity limit in § 60.672(b) and the emission test requirements of § 60.11.

(h) The subpart A requirement under § 60.7(a)(1) for notification of the date construction or reconstruction commenced is waived for affected facilities under this subpart.

(i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.

(1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

(2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.

(j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

(k) Notifications and reports required under this subpart and under subpart A of this part to demonstrate compliance with this subpart need only to be sent to the EPA Region or the State which has been delegated authority according to § 60.4(b).
Table 1 to Subpart OOO of Part 60—Exceptions to Applicability of Subpart A to Subpart OOO

<table>
<thead>
<tr>
<th>Subpart A reference</th>
<th>Applies to subpart OOO</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.4, Address</td>
<td>Yes</td>
<td>Except in § 60.4(a) and (b) submittals need not be submitted to both the EPA Region and delegated State authority (§ 60.676(k)).</td>
</tr>
<tr>
<td>60.7, Notification and recordkeeping</td>
<td>Yes</td>
<td>Except in (a)(1) notification of the date construction or reconstruction commenced (§ 60.676(h)).</td>
</tr>
<tr>
<td>60.8, Performance tests</td>
<td>Yes</td>
<td>Except in (d) performance tests involving only Method 9 (40 CFR part 60, Appendix A-4) require a 7-day advance notification instead of 30 days (§ 60.675(g)).</td>
</tr>
<tr>
<td>60.11, Compliance with standards and maintenance requirements</td>
<td>Yes</td>
<td>Except in (b) under certain conditions (§§ 60.675(c)), Method 9 (40 CFR part 60, Appendix A-4) observation is reduced from 3 hours to 30 minutes for fugitive emissions.</td>
</tr>
<tr>
<td>60.18, General control device</td>
<td>No</td>
<td>Flares will not be used to comply with the emission limits.</td>
</tr>
</tbody>
</table>

Table 2 to Subpart OOO of Part 60—Stack Emission Limits for Affected Facilities With Capture Systems

<table>
<thead>
<tr>
<th>For * * *</th>
<th>The owner or operator must meet a PM limit of * * *</th>
<th>And the owner or operator must meet an opacity limit of * * *</th>
<th>The owner or operator must demonstrate compliance with these limits by conducting * * *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected facilities (as defined in §§ 60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008</td>
<td>0.05 g/dscm (0.022 gr/dscf) a</td>
<td>7 percent for dry control devices b</td>
<td>An initial performance test according to § 60.8 of this part and § 60.675 of this subpart; and Monitoring of wet scrubber parameters according to § 60.674(a) and § 60.676(c), (d), and (e).</td>
</tr>
<tr>
<td>Affected facilities (as defined in §§ 60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008</td>
<td>0.032 g/dscm (0.014 gr/dscf) a</td>
<td>Not applicable (except for individual enclosed storage bins) 7 percent for dry control devices on individual enclosed storage bins</td>
<td>An initial performance test according to § 60.8 of this part and § 60.675 of this subpart; and Monitoring of wet scrubber parameters according to § 60.674(a) and § 60.676(c), (d), and (e); and Monitoring of baghouses according to § 60.674(c), (d), or (e) and § 60.676(b).</td>
</tr>
</tbody>
</table>

a Exceptions to the PM limit apply for individual enclosed storage bins and other equipment. See § 60.672(d) through (f).

b The stack opacity limit and associated opacity testing requirements do not apply for affected facilities using wet scrubbers.
### Table 3 to Subpart OOO of Part 60—Fugitive Emission Limits

<table>
<thead>
<tr>
<th>Affected facilities (as defined in §§ 60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008</th>
<th>10 percent opacity</th>
<th>15 percent opacity</th>
<th>The owner or operator must demonstrate compliance with these limits by conducting * * *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected facilities (as defined in §§ 60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008</td>
<td>7 percent opacity</td>
<td>12 percent opacity</td>
<td>An initial performance test according to § 60.11 of this part and § 60.675 of this subpart; and Periodic inspections of water sprays according to § 60.674(b) and § 60.676(b); and A repeat performance test according to § 60.11 of this part and § 60.675 of this subpart within 5 years from the previous performance test for fugitive emissions from affected facilities without water sprays. Affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in § 60.674(b) and § 60.676(b) are exempt from this 5-year repeat testing requirement.</td>
</tr>
</tbody>
</table>
What This Subpart Covers

§ 63.11110 What is the purpose of this subpart?

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

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

(a) The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank.

(b) If your GDF has a monthly throughput of less than 10,000 gallons of gasoline, you must comply with the requirements in § 63.11116.

(c) If your GDF has a monthly throughput of 10,000 gallons of gasoline or more, you must comply with the requirements in § 63.11117.

(d) If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in § 63.11118.

(e) An affected source shall, upon request by the Administrator, demonstrate that their monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable. For new or reconstructed affected sources, as specified in § 63.11112(b) and (c), recordkeeping to document monthly throughput must begin upon startup of the affected source. For existing sources, as specified in § 63.11112(d), recordkeeping to document monthly throughput must begin on January 10, 2008. For existing sources that are subject to this subpart only because they load gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, recordkeeping to document monthly throughput must begin on January 24, 2011. Records required under this paragraph shall be kept for a period of 5 years.

(f) If you are an owner or operator of affected sources, as defined in paragraph (a) of this section, you are not required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 as a result of being subject to this subpart. However, you must still apply for and obtain a permit under 40 CFR part 70 or 40 CFR part 71 if you meet one or more of the applicability criteria found in 40 CFR 70.3(a) and (b) or 40 CFR 71.3(a) and (b).
(g) The loading of aviation gasoline into storage tanks at airports, and the subsequent transfer of aviation gasoline within the airport, is not subject to this subpart.

(h) Monthly throughput is the total volume of gasoline loaded into, or dispensed from, all the gasoline storage tanks located at a single affected GDF. If an area source has two or more GDF at separate locations within the area source, each GDF is treated as a separate affected source.

(i) If your affected source’s throughput ever exceeds an applicable throughput threshold, the affected source will remain subject to the requirements for sources above the threshold, even if the affected source throughput later falls below the applicable throughput threshold.

(j) The dispensing of gasoline from a fixed gasoline storage tank at a GDF into a portable gasoline tank for the on-site delivery and subsequent dispensing of the gasoline into the fuel tank of a motor vehicle or other gasoline-fueled engine or equipment used within the area source is only subject to § 63.11116 of this subpart.

(k) For any affected source subject to the provisions of this subpart and another Federal rule, you may elect to comply only with the more stringent provisions of the applicable subparts. You must consider all provisions of the rules, including monitoring, recordkeeping, and reporting. You must identify the affected source and provisions with which you will comply in your Notification of Compliance Status required under § 63.11124. You also must demonstrate in your Notification of Compliance Status that each provision with which you will comply is at least as stringent as the otherwise applicable requirements in this subpart. You are responsible for making accurate determinations concerning the more stringent provisions, and noncompliance with this rule is not excused if it is later determined that your determination was in error, and, as a result, you are violating this subpart. Compliance with this rule is your responsibility and the Notification of Compliance Status does not alter or affect that responsibility.


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

(a) The emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF that meet the criteria specified in § 63.11111. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.

(b) An affected source is a new affected source if you commenced construction on the affected source after November 9, 2006, and you meet the applicability criteria in § 63.11111 at the time you commenced operation.

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

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

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

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

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

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

(b) If you have an existing affected source, you must comply with the standards in this subpart no later than January 10, 2011.
(c) If you have an existing affected source that becomes subject to the control requirements in this subpart because of an increase in the monthly throughput, as specified in § 63.11111(c) or § 63.11111(d), you must comply with the standards in this subpart no later than 3 years after the affected source becomes subject to the control requirements in this subpart.

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

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

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

(e) The initial compliance demonstration test required under § 63.11120(a)(1) and (2) must be conducted as specified in paragraphs (e)(1) and (2) of this section.

(1) If you have a new or reconstructed affected source, you must conduct the initial compliance test upon installation of the complete vapor balance system.

(2) If you have an existing affected source, you must conduct the initial compliance test as specified in paragraphs (e)(2)(i) or (e)(2)(ii) of this section.

(i) For vapor balance systems installed on or before December 15, 2009, you must test no later than 180 days after the applicable compliance date specified in paragraphs (b) or (c) of this section.

(ii) For vapor balance systems installed after December 15, 2009, you must test upon installation of the complete vapor balance system.

(f) If your GDF is subject to the control requirements in this subpart only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, you must comply with the standards in this subpart as specified in paragraphs (f)(1) or (f)(2) of this section.

(1) If your GDF is an existing facility, you must comply by January 24, 2014.

(2) If your GDF is a new or reconstructed facility, you must comply by the dates specified in paragraphs (f)(2)(i) and (ii) of this section.

(i) If you start up your GDF after December 15, 2009, but before January 24, 2011, you must comply no later than January 24, 2011.

(ii) If you start up your GDF after January 24, 2011, you must comply upon startup of your GDF.


Emission Limitations and Management Practices

§ 63.11115 What are my general duties to minimize emissions?

Each owner or operator of an affected source under this subpart must comply with the requirements of paragraphs (a) and (b) of this section.

(a) You must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review
of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

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

[76 FR 4182, Jan. 24, 2011]

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

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

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

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

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

(b) You are not required to submit notifications or reports as specified in §63.11125, §63.11126, or subpart A of this part, but you must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

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

(d) Portable gasoline containers that meet the requirements of 40 CFR part 59, subpart F, are considered acceptable for compliance with paragraph (a)(3) of this section.


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

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

(b) Except as specified in paragraph (c) of this section, you must only load gasoline into storage tanks at your facility by utilizing submerged filling, as defined in §63.11132, and as specified in paragraphs (b)(1), (b)(2), or (b)(3) of this section. The applicable distances in paragraphs (b)(1) and (2) shall be measured from the point in the opening of the submerged fill pipe that is the greatest distance from the bottom of the storage tank.

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

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

(3) Submerged fill pipes not meeting the specifications of paragraphs (b)(1) or (b)(2) of this section are allowed if the owner or operator can demonstrate that the liquid level in the tank is always above the entire opening of the fill pipe. Documentation providing such demonstration must be made available for inspection by the Administrator's delegated representative during the course of a site visit.

(c) Gasoline storage tanks with a capacity of less than 250 gallons are not required to comply with the submerged fill requirements in paragraph (b) of this section, but must comply only with all of the requirements in §63.11116.
(d) You must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

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

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


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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Testing and Monitoring Requirements

§ 63.11120 What testing and monitoring requirements must I meet?

(a) Each owner or operator, at the time of installation, as specified in § 63.11113(e), of a vapor balance system required under § 63.11118(b)(1), and every 3 years thereafter, must comply with the requirements in paragraphs (a)(1) and (2) of this section.

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

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

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

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


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


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

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

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

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

(c) Conduct of performance tests. Performance tests conducted for this subpart shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance (i.e., performance based on normal operating conditions) of the affected source. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(d) Owners and operators of gasoline cargo tanks subject to the provisions of Table 2 to this subpart must conduct annual certification testing according to the vapor tightness testing requirements found in § 63.11092(f).
Notifications, Records, and Reports

§ 63.11124  What notifications must I submit and when?

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

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in § 63.11117, unless you meet the requirements in paragraph (a)(3) of this section. If your affected source is subject to the control requirements in § 63.11117 only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, you must submit the Initial Notification by May 24, 2011. The Initial Notification must contain the information specified in paragraphs (a)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in § 63.13.

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

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

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

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in § 63.13, within 60 days of the applicable compliance date specified in § 63.11113, unless you meet the requirements in paragraph (a)(3) of this section. The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy, must indicate whether the source has complied with the requirements of this subpart, and must indicate whether the facilities' monthly throughput is calculated based on the volume of gasoline loaded into all storage tanks or on the volume of gasoline dispensed from all storage tanks. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (a)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (a)(1) of this section.

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

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

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in § 63.11118. If your affected source is subject to the control requirements in § 63.11118 only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, you must submit the Initial Notification by May 24, 2011. The Initial Notification must contain the information specified in paragraphs (b)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in § 63.13.

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

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

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

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in § 63.13, in accordance with the schedule specified in § 63.9(h). The Notification of
Compliance Status must be signed by a responsible official who must certify its accuracy, must indicate whether the source has complied with the requirements of this subpart, and must indicate whether the facility's throughput is determined based on the volume of gasoline loaded into all storage tanks or on the volume of gasoline dispensed from all storage tanks. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (b)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (b)(1) of this section.

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

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

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

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

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

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

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


§ 63.11125 What are my recordkeeping requirements?

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

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

(c) Each owner or operator of a gasoline cargo tank subject to the management practices in Table 2 to this subpart must keep records documenting vapor tightness testing for a period of 5 years. Documentation must include each of the items specified in § 63.11094(b)(2)(i) through (viii). Records of vapor tightness testing must be retained as specified in either paragraph (c)(1) or paragraph (c)(2) of this section.

(1) The owner or operator must keep all vapor tightness testing records with the cargo tank.

(2) As an alternative to keeping all records with the cargo tank, the owner or operator may comply with the requirements of paragraphs (c)(2)(i) and (ii) of this section.

(i) The owner or operator may keep records of only the most recent vapor tightness test with the cargo tank, and keep records for the previous 4 years at their office or another central location.

(ii) Vapor tightness testing records that are kept at a location other than with the cargo tank must be instantly available (e.g., via e-mail or facsimile) to the Administrator's delegated representative during the course of a site visit or within a mutually agreeable time frame. Such records must be an exact duplicate image of the original paper copy record with certifying signatures.
(d) Each owner or operator of an affected source under this subpart shall keep records as specified in paragraphs (d)(1) and (2) of this section.

(1) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.11115(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.


§ 63.11126 What are my reporting requirements?

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

(b) Each owner or operator of an affected source under this subpart shall report, by March 15 of each year, the number, duration, and a brief description of each type of malfunction which occurred during the previous calendar year and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.11115(a), including actions taken to correct a malfunction. No report is necessary for a calendar year in which no malfunctions occurred.

[76 FR 4183, Jan. 24, 2011]

Other Requirements and Information

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

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

§ 63.11131 Who implements and enforces this subpart?

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

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

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

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

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

(3) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.
§ 63.11132 What definitions apply to this subpart?

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

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

**Gasoline** means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater, which is used as a fuel for internal combustion engines.

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

**Gasoline dispensing facility (GDF)** means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment.

**Monthly throughput** means the total volume of gasoline that is loaded into, or dispensed from, all gasoline storage tanks at each GDF during a month. Monthly throughput is calculated by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the current day, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the previous 364 days, and then dividing that sum by 12.

**Motor vehicle** means any self-propelled vehicle designed for transporting persons or property on a street or highway.

**Nonroad engine** means an internal combustion engine (including the fuel system) that is not used in a motor vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under section 7411 of this title or section 7521 of this title.

**Nonroad vehicle** means a vehicle that is powered by a nonroad engine, and that is not a motor vehicle or a vehicle used solely for competition.

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

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

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

**Vapor-tight gasoline cargo tank** means a gasoline cargo tank which has demonstrated within the 12 preceding months that it meets the annual certification test requirements in § 63.11092(f) of this part.

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

<table>
<thead>
<tr>
<th>If you own or operate</th>
<th>Then you must</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A new, reconstructed, or existing GDF subject to § 63.11118</td>
<td>Install and operate a vapor balance system on your gasoline storage tanks that meets the design criteria in paragraphs (a) through (h).</td>
</tr>
<tr>
<td>(a) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnect.</td>
<td></td>
</tr>
<tr>
<td>(b) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor-tight, as defined in § 63.11132.</td>
<td></td>
</tr>
<tr>
<td>(c) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18 inches water pressure or 5.9 inches water vacuum during product transfer.</td>
<td></td>
</tr>
<tr>
<td>(d) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations.</td>
<td></td>
</tr>
<tr>
<td>(e) If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends the same distance from the bottom of the storage tank as specified in § 63.11117(b).</td>
<td></td>
</tr>
<tr>
<td>(f) Liquid fill connections for all systems shall be equipped with vapor-tight caps.</td>
<td></td>
</tr>
<tr>
<td>(g) Pressure/vacuum (PV) vent valves shall be installed on the storage tank vent pipes. The pressure specifications for PV vent valves shall be: a positive pressure setting of 2.5 to 6.0 inches of water and a negative pressure setting of 6.0 to 10.0 inches of water. The total leak rate of all PV vent valves at an affected facility, including connections, shall not exceed 0.17 cubic foot per hour at a pressure of 2.0 inches of water and 0.63 cubic foot per hour at a vacuum of 4 inches of water.</td>
<td></td>
</tr>
<tr>
<td>(h) The vapor balance system shall be capable of meeting the static pressure performance requirement of the following equation:</td>
<td></td>
</tr>
<tr>
<td>[ Pf = 2e^{-500.887/v} ]</td>
<td></td>
</tr>
<tr>
<td>Where:</td>
<td></td>
</tr>
<tr>
<td>Pf = Minimum allowable final pressure, inches of water.</td>
<td></td>
</tr>
<tr>
<td>v = Total ullage affected by the test, gallons.</td>
<td></td>
</tr>
<tr>
<td>e = Dimensionless constant equal to approximately 2.718.</td>
<td></td>
</tr>
<tr>
<td>2 = The initial pressure, inches water.</td>
<td></td>
</tr>
<tr>
<td>2. A new or reconstructed GDF, or any storage tank(s) constructed after November 9, 2006, at an existing affected facility subject to § 63.11118</td>
<td>Equip your gasoline storage tanks with a dual-point vapor balance system, as defined in § 63.11132, and comply with the requirements of item 1 in this Table.</td>
</tr>
</tbody>
</table>

1 The management practices specified in this Table are not applicable if you are complying with the requirements in § 63.11118(b)(2), except that if you are complying with the requirements in § 63.11118(b)(2)(i)(B), you must operate using management practices at least as stringent as those listed in this Table.

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

<table>
<thead>
<tr>
<th>If you own or operate</th>
<th>Then you must</th>
</tr>
</thead>
<tbody>
<tr>
<td>A gasoline cargo tank</td>
<td>Not unload gasoline into a storage tank at a GDF subject to the control requirements in this subpart unless the following conditions are met:</td>
</tr>
<tr>
<td>(i) All hoses in the vapor balance system are properly connected,</td>
<td></td>
</tr>
<tr>
<td>(ii) The adapters or couplers that attach to the vapor line on the storage tank have closures that seal upon disconnect,</td>
<td></td>
</tr>
<tr>
<td>(iii) All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor-tight,</td>
<td></td>
</tr>
<tr>
<td>(iv) All tank truck vapor return equipment is compatible in size and forms a vapor-tight connection with the vapor balance equipment on the GDF storage tank, and</td>
<td></td>
</tr>
<tr>
<td>(v) All hatchs on the tank truck are closed and securely fastened.</td>
<td></td>
</tr>
<tr>
<td>(vi) The filling of storage tanks at GDF shall be limited to unloading from vapor-tight gasoline cargo tanks. Documentation that the cargo tank has met the specifications of EPA Method 27 shall be carried with the cargo tank, as specified in §63.11125(c).</td>
<td></td>
</tr>
</tbody>
</table>


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

<table>
<thead>
<tr>
<th>Citation</th>
<th>Subject</th>
<th>Brief description</th>
<th>Applies to subpart CCCCCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>§63.1</td>
<td>Applicability</td>
<td>Initial applicability determination; applicability after standard established; permit requirements; extensions, notifications</td>
<td>Yes, specific requirements given in §63.11111.</td>
</tr>
<tr>
<td>§63.1(c)(2)</td>
<td>Title V Permit</td>
<td>Requirements for obtaining a title V permit from the applicable permitting authority</td>
<td>Yes, §63.11111(f) of subpart CCCCCC exempts identified area sources from the obligation to obtain title V operating permits.</td>
</tr>
<tr>
<td>§63.2</td>
<td>Definitions</td>
<td>Definitions for part 63 standards</td>
<td>Yes, additional definitions in §63.11132.</td>
</tr>
<tr>
<td>§63.3</td>
<td>Units and Abbreviations</td>
<td>Units and abbreviations for part 63 standards</td>
<td>Yes.</td>
</tr>
<tr>
<td>§63.4</td>
<td>Prohibited Activities and Circumvention</td>
<td>Prohibited activities; Circumvention, severability</td>
<td>Yes.</td>
</tr>
<tr>
<td>§63.5</td>
<td>Construction/Reconstruction</td>
<td>Applicability; applications; approvals</td>
<td>Yes, except that these notifications are not required for facilities subject to §63.11116</td>
</tr>
<tr>
<td>§63.6(a)</td>
<td>Compliance with Standards/Operation &amp; Maintenance—Applicability</td>
<td>General Provisions apply unless compliance extension; General Provisions apply to area sources that become major</td>
<td>Yes.</td>
</tr>
<tr>
<td>§63.6(b)(1)-(4)</td>
<td>Compliance Dates for New and Reconstructed Sources</td>
<td>Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for CAA section 112(f)</td>
<td>Yes.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Brief description</td>
<td>Applies to subpart CCCCCCC</td>
</tr>
<tr>
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<td>---------------------------</td>
</tr>
<tr>
<td>§ 63.6(b)(5)</td>
<td>Notification</td>
<td>Must notify if commenced construction or reconstruction after proposal</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.6(b)(6)</td>
<td>[Reserved]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>§ 63.6(b)(7)</td>
<td>Compliance Dates for New and Reconstructed Area Sources That Become Major</td>
<td>Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were an area source</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(c)(1)-(2)</td>
<td>Compliance Dates for Existing Sources</td>
<td>Comply according to date in this subpart, which must be no later than 3 years after effective date; for CAA section 112(f) standards, comply within 90 days of effective date unless compliance extension</td>
<td>No, § 63.11113 specifies the compliance dates.</td>
</tr>
<tr>
<td>§ 63.6(c)(3)-(4)</td>
<td>[Reserved]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>§ 63.6(c)(5)</td>
<td>Compliance Dates for Existing Area Sources That Become Major</td>
<td>Area sources That become major must comply with major source standards by date indicated in this subpart or by equivalent time period (e.g., 3 years)</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(d)</td>
<td>[Reserved]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63.6(e)(1)(i)</td>
<td>General duty to minimize emissions</td>
<td>Operate to minimize emissions at all times; information Administrator will use to determine if operation and maintenance requirements were met.</td>
<td>No. See § 63.11115 for general duty requirement.</td>
</tr>
<tr>
<td>63.6(e)(1)(ii)</td>
<td>Requirement to correct malfunctions ASAP</td>
<td>Owner or operator must correct malfunctions as soon as possible.</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(e)(2)</td>
<td>[Reserved]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>§ 63.6(e)(3)</td>
<td>Startup, Shutdown, and Malfunction (SSM) Plan</td>
<td>Requirement for SSM plan; content of SSM plan; actions during SSM</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(f)(1)</td>
<td>Compliance Except During SSM</td>
<td>You must comply with emission standards at all times except during SSM</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(f)(2)-(3)</td>
<td>Methods for Determining Compliance</td>
<td>Compliance based on performance test, operation and maintenance plans, records, inspection</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.6(g)(1)-(3)</td>
<td>Alternative Standard</td>
<td>Procedures for getting an alternative standard</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.6(h)(1)</td>
<td>Compliance with Opacity/Visible Emission (VE) Standards</td>
<td>You must comply with opacity/VE standards at all times except during SSM</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(2)(i)</td>
<td>Determining Compliance with Opacity/VE Standards</td>
<td>If standard does not State test method, use EPA Method 9 for opacity in appendix A of part 60 of this chapter and EPA Method 22 for VE in appendix A of part 60 of this chapter</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(2)(ii)</td>
<td>[Reserved]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>§ 63.6(h)(2)(iii)</td>
<td>Using Previous Tests To Demonstrate Compliance With Opacity/VE Standards</td>
<td>Criteria for when previous opacity/VE testing can be used to show compliance with this subpart</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(3)</td>
<td>[Reserved]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>§ 63.6(h)(4)</td>
<td>Notification of Opacity/VE Observation Date</td>
<td>Must notify Administrator of anticipated date of observation</td>
<td>No.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Brief description</td>
<td>Applies to subpart CCCCCC</td>
</tr>
<tr>
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<td>--------------------------</td>
</tr>
<tr>
<td>§ 63.6(h)(5)(i), (iii)-(v)</td>
<td>Conducting Opacity/VE Observations</td>
<td>Dates and schedule for conducting opacity/VE observations</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(5)(ii)</td>
<td>Opacity Test Duration and Averaging Times</td>
<td>Must have at least 3 hours of observation with 30 6-minute averages</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(6)</td>
<td>Records of Conditions During Opacity/VE Observations</td>
<td>Must keep records available and allow Administrator to inspect</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(7)(i)</td>
<td>Report Continuous Opacity Monitoring System (COMS) Monitoring Data From Performance Test</td>
<td>Must submit COMS data with other performance test data</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(7)(ii)</td>
<td>Using COMS Instead of EPA Method 9</td>
<td>Can submit COMS data instead of EPA Method 9 results even if rule requires EPA Method 9 in appendix A of part 60 of this chapter, but must notify Administrator before performance test</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(7)(iii)</td>
<td>Averaging Time for COMS During Performance Test</td>
<td>To determine compliance, must reduce COMS data to 6-minute averages</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(7)(iv)</td>
<td>COMS Requirements</td>
<td>Owner/operator must demonstrate that COMS performance evaluations are conducted according to § 63.8(e); COMS are properly maintained and operated according to § 63.8(c) and data quality as § 63.8(d)</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(7)(v)</td>
<td>Determining Compliance with Opacity/VE Standards</td>
<td>COMS is probable but not conclusive evidence of compliance with opacity standard, even if EPA Method 9 observation shows otherwise. Requirements for COMS to be probable evidence-proper maintenance, meeting Performance Specification 1 in appendix B of part 60 of this chapter, and data have not been altered</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(8)</td>
<td>Determining Compliance with Opacity/VE Standards</td>
<td>Administrator will use all COMS, EPA Method 9 (in appendix A of part 60 of this chapter), and EPA Method 22 (in appendix A of part 60 of this chapter) results, as well as information about operation and maintenance to determine compliance</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(h)(9)</td>
<td>Adjusted Opacity Standard</td>
<td>Procedures for Administrator to adjust an opacity standard</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.6(i)(1)-(14)</td>
<td>Compliance Extension</td>
<td>Procedures and criteria for Administrator to grant compliance extension</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.6(j)</td>
<td>Presidential Compliance Exemption</td>
<td>President may exempt any source from requirement to comply with this subpart</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(a)(2)</td>
<td>Performance Test Dates</td>
<td>Dates for conducting initial performance testing; must conduct 180 days after compliance date</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(a)(3)</td>
<td>CAA Section 114 Authority</td>
<td>Administrator may require a performance test under CAA section 114 at any time</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(b)(1)</td>
<td>Notification of Performance Test</td>
<td>Must notify Administrator 60 days before the test</td>
<td>Yes.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Brief description</td>
<td>Applies to subpart CCCCCC</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>§ 63.7(b)(2)</td>
<td>Notification of Re-scheduling</td>
<td>If have to reschedule performance test, must notify Administrator of rescheduled date as soon as practicable and without delay</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(c)</td>
<td>Quality Assurance (QA)/Test Plan</td>
<td>Requirement to submit site-specific test plan 60 days before the test or on date Administrator agrees with; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(d)</td>
<td>Testing Facilities</td>
<td>Requirements for testing facilities</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(e)(1)</td>
<td>Conditions for Conducting Performance Tests</td>
<td>Performance test must be conducted under representative conditions</td>
<td>No, § 63.11120(c) specifies conditions for conducting performance tests.</td>
</tr>
<tr>
<td>§ 63.7(e)(2)</td>
<td>Conditions for Conducting Performance Tests</td>
<td>Must conduct according to this subpart and EPA test methods unless Administrator approves alternative</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(e)(3)</td>
<td>Test Run Duration</td>
<td>Must have three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(f)</td>
<td>Alternative Test Method</td>
<td>Procedures by which Administrator can grant approval to use an intermediate or major change, or alternative to a test method</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(g)</td>
<td>Performance Test Data Analysis</td>
<td>Must include raw data in performance test report; must submit performance test data 60 days after end of test with the Notification of Compliance Status; keep data for 5 years</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.7(h)</td>
<td>Waiver of Tests</td>
<td>Procedures for Administrator to waive performance test</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.8(a)(1)</td>
<td>Applicability of Monitoring Requirements</td>
<td>Subject to all monitoring requirements in standard</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.8(a)(2)</td>
<td>Performance Specifications</td>
<td>Performance Specifications in appendix B of 40 CFR part 60 apply</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.8(a)(3)</td>
<td>[Reserved]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>§ 63.8(a)(4)</td>
<td>Monitoring of Flares</td>
<td>Monitoring requirements for flares in § 63.11 apply</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.8(b)(1)</td>
<td>Monitoring</td>
<td>Must conduct monitoring according to standard unless Administrator approves alternative</td>
<td>Yes.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Brief description</td>
<td>Applies to subpart CCCCCC</td>
</tr>
<tr>
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<td>--------------------------</td>
</tr>
<tr>
<td>§ 63.8(b)(2)-(3)</td>
<td>Multiple Effluents and Multiple Monitoring Systems</td>
<td>Specific requirements for installing monitoring systems; must install on each affected source or after combined with another affected source before it is released to the atmosphere provided the monitoring is sufficient to demonstrate compliance with the standard; if more than one monitoring system on an emission point, must report all monitoring system results, unless one monitoring system is a backup</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(c)(1)</td>
<td>Monitoring System Operation and Maintenance</td>
<td>Maintain monitoring system in a manner consistent with good air pollution control practices</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(c)(1)(i)-(iii)</td>
<td>Operation and Maintenance of Continuous Monitoring Systems (CMS)</td>
<td>Must maintain and operate each CMS as specified in § 63.6(e)(1); must keep parts for routine repairs readily available; must develop a written SSM plan for CMS, as specified in § 63.6(e)(3)</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(c)(2)-(8)</td>
<td>CMS Requirements</td>
<td>Must install to get representative emission or parameter measurements; must verify operational status before or at performance test</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(d)</td>
<td>CMS Quality Control</td>
<td>Requirements for CMS quality control, including calibration, etc.; must keep quality control plan on record for 5 years; keep old versions for 5 years after revisions</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(e)</td>
<td>CMS Performance Evaluation</td>
<td>Notification, performance evaluation test plan, reports</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(f)(1)-(5)</td>
<td>Alternative Monitoring Method</td>
<td>Procedures for Administrator to approve alternative monitoring</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(f)(6)</td>
<td>Alternative to Relative Accuracy Test</td>
<td>Procedures for Administrator to approve alternative relative accuracy tests for continuous emissions monitoring system (CEMS)</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.8(g)</td>
<td>Data Reduction</td>
<td>COMS 6-minute averages calculated over at least 36 evenly spaced data points; CEMS 1 hour averages computed over at least 4 equally spaced data points; data that cannot be used in average</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.9(a)</td>
<td>Notification Requirements</td>
<td>Applicability and State delegation</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.9(b)(1)-(2), (4)-(5)</td>
<td>Initial Notifications</td>
<td>Submit notification within 120 days after effective date; notification of intent to construct/reconstruct, notification of commencement of construction/reconstruction, notification of startup; contents of each</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.9(c)</td>
<td>Request for Compliance Extension</td>
<td>Can request if cannot comply by date or if installed best available control technology or lowest achievable emission rate</td>
<td>Yes.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Brief description</td>
<td>Applies to subpart CCCCCC</td>
</tr>
<tr>
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</tr>
<tr>
<td>§ 63.9(d)</td>
<td>Notification of Special Compliance Requirements for New Sources</td>
<td>For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.9(e)</td>
<td>Notification of Performance Test</td>
<td>Notify Administrator 60 days prior</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.9(f)</td>
<td>Notification of VE/Opacity Test</td>
<td>Notify Administrator 30 days prior</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.9(g)</td>
<td>Additional Notifications when Using CMS</td>
<td>Notification of performance evaluation; notification about use of COMS data; notification that exceeded criterion for relative accuracy alternative</td>
<td>Yes, however, there are no opacity standards.</td>
</tr>
<tr>
<td>§ 63.9(h)(1)-(6)</td>
<td>Notification of Compliance Status</td>
<td>Contents due 60 days after end of performance test or other compliance demonstration, except for opacity/VE, which are due 30 days after; when to submit to Federal vs. State authority</td>
<td>Yes, however, there are no opacity standards.</td>
</tr>
<tr>
<td>§ 63.9(i)</td>
<td>Adjustment of Submittal Deadlines</td>
<td>Procedures for Administrator to approve change when notifications must be submitted</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.9(j)</td>
<td>Change in Previous Information</td>
<td>Must submit within 15 days after the change</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(a)</td>
<td>Recordkeeping/Reporting</td>
<td>Applies to all, unless compliance extension; when to submit to Federal vs. State authority; procedures for owners of more than one source</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(b)(1)</td>
<td>Recordkeeping/Reporting</td>
<td>General requirements; keep all records readily available; keep for 5 years</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(i)</td>
<td>Records related to SSM</td>
<td>Recordkeeping of occurrence and duration of startups and shutdowns</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(ii)</td>
<td>Records related to SSM</td>
<td>Recordkeeping of malfunctions</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(iii)</td>
<td>Maintenance records</td>
<td>Recordkeeping of maintenance on air pollution control and monitoring equipment</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(iv)</td>
<td>Records Related to SSM</td>
<td>Actions taken to minimize emissions during SSM</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(v)</td>
<td>Records Related to SSM</td>
<td>Actions taken to minimize emissions during SSM</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(vi)-(xi)</td>
<td>CMS Records</td>
<td>Malfunctions, inoperative, out-of-control periods</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(xii)</td>
<td>Records</td>
<td>Records when under waiver</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(xiii)</td>
<td>Records</td>
<td>Records when using alternative to relative accuracy test</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(b)(2)(xiv)</td>
<td>Records</td>
<td>All documentation supporting Initial Notification and Notification of Compliance Status</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(b)(3)</td>
<td>Records</td>
<td>Applicability determinations</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(c)</td>
<td>Records</td>
<td>Additional records for CMS</td>
<td>No.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Brief description</td>
<td>Applies to subpart CCCCCC</td>
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</tr>
<tr>
<td>§ 63.10(d)(1)</td>
<td>General Reporting Requirements</td>
<td>Requirement to report</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(d)(2)</td>
<td>Report of Performance Test Results</td>
<td>When to submit to Federal or State authority</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(d)(3)</td>
<td>Reporting Opacity or VE Observations</td>
<td>What to report and when</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(d)(4)</td>
<td>Progress Reports</td>
<td>Must submit progress reports on schedule if under compliance extension</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.10(d)(5)</td>
<td>SSM Reports</td>
<td>Contents and submission</td>
<td>No. See § 63.11126(b) for malfunction reporting requirements.</td>
</tr>
<tr>
<td>§ 63.10(e)(1)-(2)</td>
<td>Additional CMS Reports</td>
<td>Must report results for each CEMS on a unit; written copy of CMS performance evaluation; two-three copies of COMS performance evaluation</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(e)(3)(i)- (iii)</td>
<td>Reports</td>
<td>Schedule for reporting excess emissions</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(e)(3)(iv)-(v)</td>
<td>Excess Emissions Reports</td>
<td>Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§ 63.8(c)(7)-(8) and 63.10(c)(5)-(13)</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(e)(3)(iv)-(v)</td>
<td>Excess Emissions Reports</td>
<td>Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§ 63.8(c)(7)-(8) and 63.10(c)(5)-(13)</td>
<td>No. § 63.11130(K) specifies excess emission events for this subpart.</td>
</tr>
<tr>
<td>§ 63.10(e)(3)(vi)-(vii)</td>
<td>Excess Emissions Report and Summary Report</td>
<td>Requirements for reporting excess emissions for CMS; requires all of the information in §§ 63.10(c)(5)-(13) and 63.8(c)(7)-(8)</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(e)(4)</td>
<td>Reporting COMS Data</td>
<td>Must submit COMS data with performance test data</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.10(f)</td>
<td>Waiver for Recordkeeping/Reporting</td>
<td>Procedures for Administrator to waive</td>
<td>Yes.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Brief description</td>
<td>Applies to subpart CCCCCC</td>
</tr>
<tr>
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</tr>
<tr>
<td>§ 63.11(b)</td>
<td>Flares</td>
<td>Requirements for flares</td>
<td>No.</td>
</tr>
<tr>
<td>§ 63.12</td>
<td>Delegation</td>
<td>State authority to enforce standards</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.13</td>
<td>Addresses</td>
<td>Addresses where reports, notifications, and requests are sent</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.14</td>
<td>Incorporations by Reference</td>
<td>Test methods incorporated by reference</td>
<td>Yes.</td>
</tr>
<tr>
<td>§ 63.15</td>
<td>Availability of Information</td>
<td>Public and confidential information</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

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>Calcar Quarry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Location:</td>
<td>860 East US Highway 150, Paoli, IN, 47454</td>
</tr>
<tr>
<td>County:</td>
<td>Orange</td>
</tr>
</tbody>
</table>
| SIC Code:               | 2951 (Asphalt Paving Mixtures and Blocks)  
                          | 1422 (Crushed and Broken Limestone) |
| Permit Renewal No.:     | F117-43007-03220    |
| Permit Reviewer:        | Dylan Finley        |

On June 30, 2020, Calcar Quarry, 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 Calcar Quarry, Inc. relating to the operation of a stationary hot mix asphalt batch plant and stone crushing operation. Calcar Quarry was issued its first FESOP Renewal (F117-29047-03220) on March 29, 2011.

Existing Approvals  
The source was issued FESOP Renewal No. F117-29047-03220 on March 29, 2011. The source has since received the following approval:

FESOP AA No. 117-33454-03220 on October 10, 2013.

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) batch hot-mix asphalt plant consisting of the following:

(1) One (1) aggregate dryer, identified as ID#3, constructed in 1958, with a maximum burner heat input capacity of fifty-one (51) million British thermal units (MMBtu) per hour firing natural gas fired burner, using No. 2 distillate fuel oil, No. 4 distillate, No. 4, 5 or 6 residual fuel oil as backup fuels, exhausting through stack SV1.

(2) One (1) batch mixer, identified as ID#2, constructed in 1958, with a maximum throughput capacity of 120 tons per hour of raw material, equipped with one (1) cyclone, identified as ID#9, and a scrubber, identified as ID#11, for particulate control and exhausting through one (1) stack, identified as SV1.

Under 40 CFR 60, Subpart I, this hot mix asphalt plant is considered an affected facility.

(3) Material handling, screening and conveying operations, constructed in 1958, exhausting to the outside atmosphere, using dust control measures as necessary pursuant to the fugitive dust control plan, consisting of the following:
Calcar Quarry  
Paoli, Indiana  
Permit Reviewer: Dylan Finley

(A) Aggregate storage piles consisting of the following:

(i) One (1) #23 natural sand pile, pile size: 400 tons.
(ii) One (1) #24 crushed limestone pile, pile size: 100 tons.
(iii) One (1) #5 limestone pile, pile size: 200 tons.
(iv) One (1) #11f limestone pile, pile size: 400 tons.
(v) One (1) #11c limestone pile, pile size: 400 tons.
(vi) One (1) #8 limestone pile, pile size: 200 tons.

(B) One (1) silo, with 100 ton capacity (occasionally used for temporary hot mix storage).

(C) Six (6) cold feed bins (for aggregate going into batch plant), identified as ID#1CFB, #2CFB, #3CFB, #4CFB, #5CFB and #6CFB, each with a capacity of 30 tons.

(D) Two (2) flat conveyors, identified as #1FC and #2FC, each with a capacity of 70 tons per hour.

(E) One (1) screening system, identified as #1SS, with a capacity of 120 tons per hour.

(b) One (1) 1.0 million British Thermal Units (MMBtu) per hour hot oil heater firing natural gas as the primary fuel and #1 fuel oil as the backup fuel, and exhausting to stack SV1.

(c) Four (4) storage tanks, including:

(1) One (1) 9,000 gallon storage tank, identified as ID#15A, installed prior to July 23, 1984, for liquid asphalt AC-20.

(2) One (1) 11,000 gallon storage tank, identified as ID#15B, installed prior to July 23, 1984, for liquid asphalt AC-20.

(3) One (1) 1,000 gallon storage tank, identified as ID #16, installed prior to July 23, 1984, for #1 fuel oil.

(4) One (1) 8,000 gallon storage tank, identified as ID#14, installed prior to July 23, 1984, for either #2 fuel or waste oil.

(d) One (1) crushed stone operation, constructed in 1958, using dust control measures as necessary pursuant to the fugitive dust control plan, consisting of the following:

(1) One (1) jaw crusher, identified as unit ID#1CR, installed in March 2010, capable of processing a maximum of 100 tons per hour of aggregate.

(2) One (1) standard crusher, identified as unit ID#2CR, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.

(3) One (1) standard crusher, identified as unit ID#3CR, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate.

(4) One (1) short head crusher, identified as unit ID#4CR, installed in 1990, capable of processing a maximum of 100 tons per hour of aggregate.
Two (2) Secco screens, identified as units ID#1SC and ID#2SC, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate, each.

One (1) Conveying system consisting of:

(A) Twenty-one (21) belt conveyors, identified as units ID#1-16BC, #18BC, #19BC, #20BC, #23BC and #24BC, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate.

(B) Three (3) radial stackers, identified as units ID#17RS, #21RS, and #22RS, installed in 2010, capable of processing a maximum of 100 tons per hour of aggregate.

Under NSPS Subpart OOO, the crushing operation is considered an affected facility.

Aggregate storage piles consisting of the following:

(A) One (1) #73 limestone pile, pile size: 3,000 tons.

(B) One (1) #fill pile, pile size: 2,000 tons.

(C) One (1) #53 limestone pile, pile size: 2,000 tons.

(D) One (1) #24 crushed limestone pile, pile size: 2,000 tons.

(E) One (1) #11f limestone pile, pile size: 1,000 tons.

(F) One (1) #11c limestone pile, pile size: 200 tons.

(G) One (1) #11b-borrow limestone pile, pile size: 500 tons.

(H) One (1) #8 limestone pile, pile size: 2,000 tons.

(I) One (1) #2 limestone pile, pile size: 2,000 tons.

Insignificant Activities

The source also consists of the following insignificant activities:

(a) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such as filling of tanks, locomotives, automobiles, having storage capacity less than or equal to ten thousand five hundred (10,500) gallons;

Under 40 CFR 60, Subpart CCCCCC, the units comprising this operation are considered affected facilities.

(b) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu/hr and firing fuel containing less than five-tenths (0.5) percent;

One (1) #1 fuel oil-fired combustion unit, for use as a backup system in place of the natural gas hot oil heater when fuel oil is the primary fuel and not natural gas.

(c) One (1) testing laboratory as defined in 326 IAC 2-7-1(20).
(d) Paved and unpaved roads and parking lots with public access, using dust control measures as necessary pursuant to the fugitive dust control plan.

(e) Drilling and blasting associated with the quarry operation.

**Enforcement Issue**

There are no enforcement actions pending.

**Emission Calculations**

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

**County Attainment Status**

The source is located in Orange 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 January 16, 2018, for the 2015 8-hour ozone standard.</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>Unclassifiable or attainment effective April 15, 2015, for the 2012 annual PM₂.₅ standard.</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>Unclassifiable or attainment effective December 13, 2009, for the 2006 24-hour PM₂.₅ standard.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>Unclassifiable effective November 15, 1990.</td>
</tr>
<tr>
<td>NO₂</td>
<td>Unclassifiable or attainment effective January 29, 2012, for the 2010 NO₂ standard.</td>
</tr>
<tr>
<td>Pb</td>
<td>Unclassifiable or attainment effective December 31, 2011, for the 2008 lead standard.</td>
</tr>
</tbody>
</table>

(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. Orange 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**

Orange 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.

(c) **Other Criteria Pollutants**

Orange 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**

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). However, there is an applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants that was in effect on August 7, 1980 (NSPS Subpart OOO for Nonmetallic Mineral Processing Plants); therefore, fugitive emissions are 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](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$ (Xylenes)</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PTE of Entire Source Excluding Fugitive Emissions*</td>
<td>9601</td>
<td>1350</td>
<td>81.10</td>
<td>127.47</td>
<td>88.38</td>
<td>10.82</td>
<td>120.37</td>
<td>&lt;10</td>
<td>&lt;25</td>
</tr>
<tr>
<td>Title V Major Source Thresholds</td>
<td>NA</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

$^1$Under the Part 70 Permit program (40 CFR 70), PM$_{10}$ and PM$_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."

$^2$PM$_{2.5}$ listed is direct PM$_{2.5}$.

$^3$Single highest source-wide HAP

*Fugitive HAP emissions are always included in the source-wide emissions.

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$_{10}$, SO$_2$, and CO are equal to or greater than 100 tons per year, each. However, the Permittee has agreed to limit the source’s PM$_{10}$, SO$_2$, 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 regulated air 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 less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(30)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.
Potential to Emit After Issuance

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

<p>| Potential To Emit of the Entire Source After Issuance of Renewal (tons/year) |</p>
<table>
<thead>
<tr>
<th>PM&lt;sub&gt;1&lt;/sub&gt;</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt;</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt;</th>
<th>SO&lt;sub&gt;2&lt;/sub&gt;</th>
<th>NO&lt;sub&gt;x&lt;/sub&gt;</th>
<th>VOC</th>
<th>CO</th>
<th>Single HAP&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PTE of Entire Source Excluding Fugitive Emissions*</td>
<td>182.04</td>
<td>74.73</td>
<td>78.71</td>
<td>99.00</td>
<td>68.43</td>
<td>8.90</td>
<td>99.00</td>
<td>0.67</td>
</tr>
<tr>
<td>Title V Major Source Thresholds</td>
<td>NA</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

*Under the Part 70 Permit program (40 CFR 70), PM<sub>10</sub> and PM<sub>2.5</sub>, not particulate matter (PM), are each considered as a "regulated air pollutant."

Appendix A of this TSD reflects the detailed potential to emit of the entire source after issuance.

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. 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), 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

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 Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc, and 326 IAC 12, are still not included in the permit for the one (1) natural gas-fired hot oil heater, with a maximum rated heat input capacity of 1.0 MMBtu/hr, because it still has a maximum design heat input capacity of less than the applicability threshold of 10 million British thermal units per hour.

(b) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb, and 326 IAC 12, are still not included in the permit for the one (1) 8,000 gallon No. 2 Fuel Oil storage tank, identified as Tank ID #14, one (1) 1,000 gallon No. 1 Fuel Oil storage tank, identified as Tank ID #16, one (1) 9,000 gallon liquid asphalt storage tank,
identified as Tank ID #15A, and one (1) 11,000 gallon liquid asphalt storage tank, identified as Tank ID #15B, because each tank was constructed before the rule applicability date of July 23, 1984, each tank still has a maximum capacity of less than 75 m$^3$ (19.813 gallons), and the liquid stored in each tank still has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).

(c) 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 still not included in the permit for this source, because pursuant to 40 CFR 60.471, the hot mix asphalt plant is not an asphalt processing plant because it does not blow asphalt, and it is not an asphalt roofing plant because it does not produce asphalt roofing products.

(d) The requirements of the New Source Performance Standard for Bulk Gasoline Terminals, 40 CFR 60, Subpart XX, and 326 IAC 12, are still not included in the permit for this source, because the source does not meet the definition of a bulk gasoline terminal, as defined in 40 CFR 60.500. The source has an insignificant gasoline fuel transfer and dispensing operation.

(e) The requirements of the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR 60, Subpart UUU, and 326 IAC 12, are still not included in the permit, because this source is not a mineral processing plant, meaning that it does not process or produce any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals; alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller’s earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

(f) This source is still subject to the New Source Performance Standards for Hot Mix Asphalt Facilities, 40 CFR 60, Subpart I, and 326 IAC 12, because the source is a stationary hot mix asphalt batch plant. The units subject to this rule includes the following:

1. Dryers
2. Systems for screening, handling, storing, and weighing hot aggregate
3. Systems for loading, transferring, and storing mineral filler
4. Systems for mixing hot mix asphalt
5. The loading, transfer, and storage systems associated with emission control systems.

This source is subject to the following portions of Subpart I:

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

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

(g) This source is still subject to the New Source Performance Standards for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart OOO, and 326 IAC 12, because the source crushes nonmetallic minerals.

The crushed stone operation was constructed before August 31, 1983. Therefore, at the time it was not subject to the New Source Performance Standards for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO). However, the crushed stone operation was modified in 1990 when the source constructed an additional crusher, identified as unit ID#4CR. As a result, the crushed stone operation is subject to the New Source Performance Standards for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO).
The source submitted information on the new jaw crusher, identified as unit ID#1CR, that was installed in March 2010. This jaw crusher replaced an existing crusher (installed in 1974) with the same 100 tons per hour capacity and did not replace all existing facilities in a production line with new facilities. Therefore, the crusher ID#1CR is subject to Subpart OOO, however, pursuant to 40 CFR 60.670(d)(1), the specific requirements of 40 CFR 60.672, 40 CFR 60.674, and 40 CFR 60.675, Subpart OOO are not applicable to this crusher.

The units subject to this rule include the following:

(1) One (1) jaw crusher, identified as unit ID#1CR, installed in March 2010, capable of processing a maximum of 100 tons per hour of aggregate, with no control. This jaw crusher replaced the existing crusher that was constructed in 1974.

(2) One (1) standard crusher, identified as unit ID#2CR, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate, with no control.

(3) One (1) standard crusher, identified as unit ID#3CR, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate, with no control.

(4) One (1) short head crusher, identified as unit ID#4CR, installed in 1990, capable of processing a maximum of 100 tons per hour of aggregate, with no control.

(5) Two (2) Secco screens, identified as units ID#1SC and ID#2SC, installed in 1978, capable of processing a maximum of 100 tons per hour of aggregate, each, with no control.

(6) One (1) Conveying system consisting of:

(A) Twenty-one (21) belt conveyors, identified as units ID#1-16BC, #18BC, #19BC, #20BC, #23BC and #24BC, installed in 1981, capable of processing a maximum of 100 tons per hour of aggregate, with no control.

(B) Three (3) radial stackers, identified as units ID#17RS, #21RS, and #22RS, installed in 2010, capable of processing a maximum of 100 tons per hour of aggregate, with no control.

This source is subject to the following portions of Subpart O:

(a) 40 CFR 60.70(a), (d), (e), and (f)
(b) 40 CFR 60.671
(c) 40 CFR 60.672(b), (d), and (e)
(d) 40 CFR 60.673
(e) 40 CFR 60.675(a), (c)(1)(i), (ii), (iii), (c)(3), (d), (e), (g), and (i)
(f) 40 CFR 60.676(a), (b)(1), (f), (h), (i), (j), and (k)
(g) Table 1 and Table 3

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

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

(h) 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):

(i) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Portland Cement Manufacturing Industry, 40 CFR 63, Subpart LLLL and 326 IAC 20-27 are still not included in the permit for this source, since the existing stationary source does not meet the definition of a Portland cement plant, as defined in § 63.1341, because this source does not manufacture Portland cement.

(j) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD and 326 IAC 20, are still not included in the permit for this source, since this source is a minor source for HAPs.

(k) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLLL, and 326 IAC 20, are still not included in the permit for this source, since the hot mix asphalt plant is not a major source engaging in the preparation of asphalt flux or asphalt roofing materials.

(l) The gasoline fuel transfer and dispensing operation is still subject to the National Emission Standards for Hazardous Air Pollutants for Source Category Gasoline Dispensing Facilities, 40 CFR 63, Subpart CCCCCC, because the source has a gasoline dispensing facility (GDF) and is an area source for HAPs. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes storage tanks. The units subject to this rule include the following:

A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such as filling of tanks, locomotives, automobiles, having storage capacity less than or equal to ten thousand five hundred (10,500) gallons;

This source is subject to the following portions of Subpart CCCCCC:

(1) 40 CFR 63. 11110
(2) 40 CFR 63. 11111(a)(b)(e)(f)
(3) 40 CFR 63. 11112(a)(d)
(4) 40 CFR 63. 11113(b)(c)
(5) 40 CFR 63. 11116
(6) 40 CFR 63. 11130
(7) 40 CFR 63. 11131
(8) 40 CFR 63. 11132
(9) Table 3

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

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the source except as otherwise specified in 40 CFR 63, Subpart CCCCCC.

(m) 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.

(n) 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 - Entire Source

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

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

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, Clark, or Floyd County, and its potential to emit lead is less than 5 tons per year. Therefore, this rule does not apply.

326 IAC 2-8-4 (FESOP)
FESOP applicability is discussed under the Unrestricted Potential Emissions section of this document.

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)
The source is subject to the requirements of 326 IAC 6-4, because the asphalt plant load-out and on-site yard, hot oil and asphalt heaters, and the material screening, and conveying, combined material processing and handling, the material storage piles, and unpaved roads from both the crushed stone operation and the asphalt plant each have the potential to emit fugitive particulate emissions. 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 Orange 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.

State Rule Applicability – Individual Facilities

State rule applicability has been reviewed as follows:

Asphalt Plant
326 IAC 6-2-1 (Particulate Emission Limitations for Sources of Indirect Heating)
The dryer/mixer is not subject to the requirements of 326 IAC 6-2 because it is not a source of indirect heating.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(c)(5), the asphalt plant is not subject to the requirements of 326 IAC 6-3, since particulate emissions from this asphalt plant are subject to a more stringent particulate requirement in 40 CFR 60, Subpart I.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
This emission unit is subject to 326 IAC 326 IAC 7-1.1 because it has a potential to emit sulfur dioxide (SO2) equal to or greater than 25 tons per year or 10 pounds per hour. Pursuant to 7-1.1-2, sulfur dioxide emissions from the dryer/mixer shall not exceed five-tenths (0.5) pound per MMBtu for distillate oil combustion. Note: No. 4 fuel oil is distillate oil.

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The dryer/mixer is not subject to the requirements of 326 IAC 8-1-6 because it was constructed before January 1, 1980.

326 IAC 8-5-2 (Miscellaneous operations: asphalt paving)
Any paving application made after January 1, 1980, is subject to the requirements of 325 IAC 8-5-2. Pursuant to this rule, no person shall cause or allow the use of cutback asphalt or asphalt emulsion containing more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:

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

326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Crushed Stone Operations

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(a), the requirements of 326 IAC 6-3-2 are applicable to the crushed stone operation, since it is a manufacturing process not exempted from this rule under 326 IAC 6-3-1(b) and is not subject to a particulate matter limitation that is as stringent as or more stringent than the particulate limitation established in this rule as specified in 326 IAC 6-3-1(c).

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the following individual processes shall not exceed 51.28 pounds per hour, each, when operating at a process weight rate of 100 tons per hour (each). The pound per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

\[(a) \, E = 4.10 \, P^{0.67} \quad \text{where} \quad E = \text{rate of emission in pounds per hour and} \]
\[P = \text{process weight rate in tons per hour} \]

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

\[(b) \, E = 55.0 \, P^{0.11} - 40 \quad \text{where} \quad E = \text{rate of emission in pounds per hour; and} \]
\[P = \text{process weight rate in tons per hour} \]
<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Emissions (lb/hr) before control</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID#1SC</td>
<td>100</td>
<td>51.28</td>
<td>2.5</td>
<td>(b)</td>
</tr>
<tr>
<td>ID#2SC</td>
<td>100</td>
<td>51.28</td>
<td>2.5</td>
<td>(b)</td>
</tr>
</tbody>
</table>

Based on PTE (uncontrolled) calculations, control equipment is not needed to comply with these limits.

The following units have potential to emit of PM less than 0.551 lb/hr and are exempt from the requirements of 326 IAC 6-3-2: ID#1CR / jaw crusher; ID#2CR / standard crusher; ID#3CR / standard crusher; ID#4CR / standard crusher; ID#1-16BC, #18BC,#19BC,#20BC, #23BC and #24BC, ID#17RS, #21RS, and #22RS.

### Hot Oil/Asphalt Cement Heaters

**326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)**
The hot oil heater is not subject to the requirements of 326 IAC 6-3, since, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight.

**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)**
The hot oil heater 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 12 (New Source Performance Standards)**
See Federal Rule Applicability Section of this TSD.

**326 IAC 20 (Hazardous Air Pollutants)**
See Federal Rule Applicability Section of this TSD.

### Storage Tanks

**326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)**
Even though, the storage tanks were constructed after January 1, 1980, they are not subject to the requirements of 326 IAC 8-1-6 because their unlimited VOC potential emissions is less than twenty-five (25) tons per year.

**326 IAC 8-5-2 (Miscellaneous operations: asphalt paving)**
Any paving application made after January 1, 1980, is subject to the requirements of 325 IAC 8-5-2. Pursuant to this rule, no person shall cause or allow the use of cutback asphaly or asphaly emulsion containing more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:

- (d) Penetrating prime coating
- (e) Stockpile storage
- (f) Application during the months of November, December, January, February, and March.

**326 IAC 12 (New Source Performance Standards)**
See Federal Rule Applicability Section of this TSD.
See Federal Rule Applicability Section of this TSD.
Storage Tanks

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Even though, the storage tanks were 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 8-4-3 (Petroleum Liquid Storage Facilities)
The four (4) storage tanks, are not subject to the requirements of 326 IAC 8-4-3 because they are not petroleum liquid storage vessels with capacities greater than thirty-nine thousand (39,000) gallons.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
This stationary source is located in Orange County. The requirements of 326 IAC 8-9 apply only to vessels used to store a volatile organic liquid that are located in Clark, Floyd, Lake, or Porter Counties. Therefore, the requirements of 326 IAC 8-9 do not apply to any of the liquid asphalt storage tanks, fuel oil storage tanks, and/or waste oil storage tanks.

326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

### 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>Date of Initial Valid Demonstration</th>
<th>Pollutant/Parameter</th>
<th>Frequency of Testing</th>
<th>Authority</th>
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</thead>
<tbody>
<tr>
<td>Dryer/Mixer</td>
<td>Baghouse</td>
<td>Stack testing conducted on February 19, 2020</td>
<td>PM</td>
<td>every 5 years</td>
<td>326 IAC 2-2, 326 IAC 6-3-2</td>
</tr>
<tr>
<td>Dryer/Mixer</td>
<td>Baghouse</td>
<td>Stack testing conducted on February 19, 2020</td>
<td>PM10/PM2.5</td>
<td>every 5 years</td>
<td>326 IAC 2-2</td>
</tr>
</tbody>
</table>
(1) In order to comply with PSD Minor and FESOP limits for particulates, the Permittee shall use a wet process or continuous wet suppressions at all times that the crushed stone operation is in operation.

(2) In order to comply with PSD Minor and FESOP limits for particulates, the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.

(3) In order to comply with FESOP limits for SO2, the Permittee is required to provide vendor analysis or analyze fuel samples for sulfur content of fuels used in the drum-mixer.

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

<table>
<thead>
<tr>
<th>Control Device / Emission Unit</th>
<th>Type of Parametric Monitoring</th>
<th>Frequency</th>
<th>Range or Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dryer/Mixer Baghouse</td>
<td>Visible emission notations</td>
<td>Daily</td>
<td>Verify whether emissions are normal or abnormal</td>
</tr>
<tr>
<td>Dryer/Mixer Baghouse</td>
<td>Pressure drop monitoring</td>
<td>Daily</td>
<td>Within normal range of five tenths (0.5) to six and five tenths (6.5) 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 and 326 IAC 2-8 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70) not applicable.

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 June 30, 2020.

The operation of this a stationary hot mix asphalt batch plant and stone crushing operation shall be subject to the conditions of the attached proposed FESOP Renewal No. F117-43007-03220.

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 Dylan Finley, 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) 232-1139 or (800) 451-6027, and ask for Dylan Finley or (317) 232-1139.

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

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM 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.
### Appendix A.1: Unlimited Emissions Calculations

#### Entire Source

**Company Name:** Calcar Quarry  
**Source Address:** 555 Dual US Highway 130, Paoli, Indiana 47454  
**Reviewer:** Dylan Finley

#### Uncontrolled Emissions (Asphalt Plant and Non-Fugitive Emissions from Quarry Operations)**

<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>Total HAPs</th>
<th>Worst Case HAP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unlimited/Uncontrolled Potential to Emit (tons/year)</strong></td>
<td></td>
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<tr>
<td><strong>Criteria Pollutants</strong></td>
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#### Fugitive Emissions (Asphalt Plant)

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<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>Total HAPs</th>
<th>Worst Case HAP</th>
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</thead>
<tbody>
<tr>
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<tr>
<td><strong>Unlimited/Uncontrolled Potential to Emit (tons/year)</strong></td>
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#### Fugitive Emissions (Quarry Operations)

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<th>CO</th>
<th>Total HAPs</th>
<th>Worst Case HAP</th>
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</thead>
<tbody>
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<tr>
<td><strong>Unlimited/Uncontrolled Potential to Emit (tons/year)</strong></td>
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<tr>
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</tr>
</tbody>
</table>

#### Notes:

- **negl.** = negligible
- **Worse Case Fuel Consumption:** based on the fuel with the highest emissions for each specific pollutant.
- **PM component percentages provided by the source.
- **SO2 emissions from Dryer Fuel Combustion and Dryer/Mixer slag processing.PLus **Worse Case Emissions from Hot Oil Heater Fuel Combustion
- **Based on information provided by the source. Emission DQI has determined that the primary activity at this source is the quarry operation, with crushed stone as the primary product produced and sold. The production of asphalt or the source is considered a secondary activity. Fugitive emissions are handled as follows:**
  1. Since the asphalt plant (the secondary activity at the source) is in a source category for which there is an applicable New Source Performance Standard (i.e., NSPS, Subpart I, Standards of Performance for Hot Mix Asphalt Plants) that was in effect on August 7, 1980, the fugitive emissions from the asphalt plant are counted toward the determination of PSD and Part 70 Permit applicability.
  2. The quarry operation (the primary activity at the source) is not in a source category for which there is an applicable New Source Performance Standard that was in effect on August 7, 1980; therefore, fugitive emissions from the quarry operation (blasting, material storage piles, material processing and handling (drop points), and unpaved roads at the quarry) are not counted toward the determination of PSD and Part 70 Permit applicability.
### Maximum Capacity

- **Maximum Hourly Asphalt Production**: 3,800 lbs/hr
- **Maximum Annual Asphalt Production**: 260,000 tons
- **Maximum Fuel Input Rate**: 90 MMBtu/hr

### Exhaust Emissions Calculations

#### Unlimited/Uncontrolled Emissions

<table>
<thead>
<tr>
<th>Criteria/Pollutant</th>
<th>Natural Gas (MMCF)</th>
<th>No. 2 Fuel Oil (bl/kgal)</th>
<th>Residual (No. 5 or 6) Fuel Oil (bl/kgal)</th>
<th>Propane</th>
<th>Butane</th>
<th>Used Waste Oil (bl/kgal)</th>
<th>Natural Gas (tons/yr)</th>
<th>No. 2 Fuel Oil (tons/yr)</th>
<th>Residual (No. 5 or 6) Fuel Oil (tons/yr)</th>
<th>Propane (tons/yr)</th>
<th>Butane (tons/yr)</th>
<th>Used Waste Oil (tons/yr)</th>
<th>Worse Case Fuel (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PM2.5</strong></td>
<td>8.38E-03</td>
<td>1.13E-03</td>
<td>1.13E-03</td>
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<td>1.13E-03</td>
<td>6.13E-03</td>
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<tr>
<td><strong>SO2</strong></td>
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<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

#### Polycyclic Organic Matter

- **Hazardous Air Pollutant**: 0.42
- **1.1.1-Trichloroethane**: 0.11
- **Mercaptans**: 0.23
- **Phenol**: 0.23
- **Nitrobenzene**: 0.11
- **Acetone**: 0.00
- **Methylene Chloride**: 0.00
- **Butyl Chloride**: 0.00
- **Formaldimethane**: 0.00
- **1.1.2-Ethylbenzene**: 0.00
- **Hydrocarbon**: 0.00

#### Other All Fuels

- **Unlimited/Uncontrolled Potential to Emit (tons/yr)**: 1.28

#### Methodology

- **Natural Gas (MMCF)/hr** = Maximum Fuel Input Rate (MMBtu/hr) x (8,760 hr/yr)
- **No. 2 Fuel Oil (bl/kgal)** = Maximum Fuel Input Rate (MMBtu/hr) x (1 gal/0.0974 MMBtu)
- **Residual Fuel (No. 5 or 6) Oil (bl/kgal)** = Maximum Fuel Input Rate (MMBtu/hr) x (1 bl/0.2197 MMBtu)
- **Propane**: 0.03
- **Butane**: 0.03
- **Used Waste Oil**: 0.03

#### Emission Factors (lb/MMCF)

- **Acetaldehyde**: 0.00
- **Acrolein**: 0.00
- **Phenol**: 0.00
- **Xylene**: 0.00
- **Hydrocarbon**: 0.00

#### End Product

- **Waste Oil**: 0.00

---

*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.*

**Unlimited/Uncontrolled Emissions**

- **Maximum Hourly Asphalt Production**: 3,800 lbs/hr
- **Maximum Annual Asphalt Production**: 260,000 tons
- **Maximum Fuel Input Rate**: 90 MMBtu/hr

#### Natural Gas Usage (MMCF/yr)

- **Maximum Fuel Usage (bl/kgal)**: 0.03
- **Butane Usage (bl/kgal)**: 0.03
- **Used Waste Oil Usage (bl/kgal)**: 0.03

#### Other All Fuels

- **Unlimited/Uncontrolled Potential to Emit (tons/yr)**: 1.28

#### Other All Fuels

- **Waste Oil**: 0.00

---

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

Maximum Hourly Asphalt Production = 120 ton/hr
Maximum Annual Asphalt Production = 600,000 ton/yr

Criteria Pollutant

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<tr>
<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 PTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM*</td>
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<td>VOC**</td>
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Hazardous Air Pollutants

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<th>Natural Gas</th>
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<th>Waste Oil</th>
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</table>

Methodology

Worst Single HAP = 0.81 (xylene)


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

** PM, PM10, and PM2.5 AP-42 emission factors are 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.
Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Slag Processing

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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

Maximum Annual Slag Usage* = 0 ton/yr

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Emission Factor (lb/ton)**</th>
<th>Unlimited Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO2</td>
<td>0.74</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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

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

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

Abbreviations
SO2 = Sulfur Dioxide
Appendix A.1: Unlimited Emissions Calculations

Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

Maximum Hot Oil Heater Fuel Input Rate = 1.00 MMBtu/hr
Natural Gas Usage = 9 MMCF/yr
No. 2 Fuel Oil Usage = 62,571 gal/yr, and 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>Natural Gas (tons/yr)</th>
<th>No. 2 Fuel Oil (tons/yr)</th>
<th>Worse Case Fuel (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>7.6</td>
<td>3.3</td>
<td>0.033</td>
<td>0.103</td>
<td>0.16</td>
</tr>
<tr>
<td>SO2</td>
<td>0.6</td>
<td>71.0</td>
<td>0.003</td>
<td>2.221</td>
<td>2.22</td>
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<tr>
<td>NOx</td>
<td>100</td>
<td>20.0</td>
<td>0.438</td>
<td>0.626</td>
<td>0.63</td>
</tr>
<tr>
<td>VOC</td>
<td>5.5</td>
<td>0.20</td>
<td>0.024</td>
<td>0.006</td>
<td>0.02</td>
</tr>
<tr>
<td>CO</td>
<td>84</td>
<td>5.0</td>
<td>0.368</td>
<td>0.156</td>
<td>0.37</td>
</tr>
<tr>
<td>Hazardous Air Pollutant</td>
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<tr>
<td>Arsenic</td>
<td>2.0E-04</td>
<td>5.6E-04</td>
<td>8.8E-07</td>
<td>1.75E-05</td>
<td>1.8E-05</td>
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<tr>
<td>Beryllium</td>
<td>1.2E-04</td>
<td>4.2E-04</td>
<td>5.3E-08</td>
<td>1.3E-05</td>
<td>1.3E-05</td>
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<tr>
<td>Cadmium</td>
<td>1.1E-03</td>
<td>4.2E-04</td>
<td>4.8E-06</td>
<td>1.3E-05</td>
<td>1.3E-05</td>
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<tr>
<td>Chromium</td>
<td>1.4E-03</td>
<td>4.2E-04</td>
<td>6.1E-06</td>
<td>1.3E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Lead</td>
<td>8.4E-05</td>
<td>3.7E-07</td>
<td>3.7E-07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese</td>
<td>3.8E-04</td>
<td>8.4E-04</td>
<td>1.7E-06</td>
<td>2.6E-05</td>
<td>2.6E-05</td>
</tr>
<tr>
<td>Mercury</td>
<td>2.6E-04</td>
<td>4.2E-04</td>
<td>1.1E-06</td>
<td>1.3E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Nickel</td>
<td>2.1E-03</td>
<td>4.2E-04</td>
<td>9.2E-06</td>
<td>1.3E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Selenium</td>
<td>2.4E-05</td>
<td>2.1E-03</td>
<td>1.1E-07</td>
<td>6.5E-05</td>
<td>6.6E-05</td>
</tr>
<tr>
<td>Benzene</td>
<td>2.1E-03</td>
<td>9.3E-06</td>
<td>9.2E-06</td>
<td>9.2E-06</td>
<td></td>
</tr>
<tr>
<td>Dibenzodiphenylethene</td>
<td>1.2E-03</td>
<td>5.3E-06</td>
<td>5.3E-06</td>
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<td></td>
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<tr>
<td>Ethylbenzene</td>
<td>0.0E+00</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>7.5E-02</td>
<td>6.1E-02</td>
<td>3.3E-04</td>
<td>1.9E-03</td>
<td>1.9E-03</td>
</tr>
<tr>
<td>Hexane</td>
<td>1.8E+00</td>
<td></td>
<td>0.91</td>
<td>7.9E-03</td>
<td></td>
</tr>
<tr>
<td>Phenol</td>
<td>0.0E+00</td>
<td></td>
<td></td>
<td></td>
<td>0.0E+00</td>
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<tr>
<td>Toluene</td>
<td>3.4E-03</td>
<td>1.5E-05</td>
<td>1.5E-05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total PAH Haps</td>
<td>negl</td>
<td></td>
<td>0.0E+00</td>
<td>0.0E+00</td>
<td></td>
</tr>
<tr>
<td>Polycyclic Organic Matter</td>
<td>negl</td>
<td></td>
<td>3.30E-03</td>
<td>1.03E-04</td>
<td>1.0E-04</td>
</tr>
</tbody>
</table>

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

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

Total HAPs = 8.3E-03 2.2E-03 0.010
Appendix A.1: Unlimited Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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</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>PM*</td>
<td>5.2E-04</td>
<td>5.9E-04</td>
<td>NA</td>
<td>0.16</td>
<td>0.18</td>
<td>NA</td>
<td>0.33</td>
</tr>
<tr>
<td>Organic PM</td>
<td>3.4E-04</td>
<td>2.5E-04</td>
<td>NA</td>
<td>0.10</td>
<td>0.076</td>
<td>NA</td>
<td>0.18</td>
</tr>
<tr>
<td>TOC</td>
<td>0.004</td>
<td>0.012</td>
<td>0.001</td>
<td>1.25</td>
<td>3.66</td>
<td>0.330</td>
<td>5.2</td>
</tr>
<tr>
<td>CO</td>
<td>0.001</td>
<td>0.001</td>
<td>3.5E-04</td>
<td>0.40</td>
<td>0.354</td>
<td>0.106</td>
<td>0.86</td>
</tr>
</tbody>
</table>

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

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/PM10/PM2.5 Ef = 0.000181 + 0.00141(-V)e^((0.0251)(T+460)-20.43)
Organic PM Ef = 0.00141(-V)e^((0.0251)(T+460)-20.43)
TOC Ef = 0.0172(-V)e^((0.0251)(T+460)-20.43)
CO Ef = 0.00558(-V)e^((0.0251)(T+460)-20.43)

Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):
PM/PM10 Ef = 0.000332 + 0.00105(-V)e^((0.0251)(T+460)-20.43)
Organic PM Ef = 0.00105(-V)e^((0.0251)(T+460)-20.43)
TOC Ef = 0.0504(-V)e^((0.0251)(T+460)-20.43)
CO Ef = 0.00488(-V)e^((0.0251)(T+460)-20.43)

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

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

Abbreviations
TOC = Total Organic Compounds
CO = Carbon Monoxide
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
### Appendix A.1: Unlimited Emissions Calculations

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

**Company Name:** Calcar Quarry  
**Source Address:** 860 East US Highway 150, Paoli, Indiana 47454  
**Renewal:** 117-43007-03220  
**Reviewer:** Dylan Finley

---

**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>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>Load-out</th>
<th>Silo Filling</th>
<th>Onsite Yard</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAH HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Speciation Profile</td>
<td>Unlimited/Uncontrolled Potential to Emit (tons/yr)</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%</td>
<td>0.47%</td>
<td>2.7E-04</td>
<td>3.6E-04</td>
<td>NA</td>
<td>6.2E-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>2.9E-05</td>
<td>1.1E-05</td>
<td>NA</td>
<td>3.9E-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>7.2E-05</td>
<td>9.9E-05</td>
<td>NA</td>
<td>1.7E-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%</td>
<td>0.056%</td>
<td>1.9E-05</td>
<td>4.3E-05</td>
<td>NA</td>
<td>6.2E-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>7.8E-06</td>
<td>0</td>
<td>NA</td>
<td>7.8E-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>2.3E-06</td>
<td>0</td>
<td>NA</td>
<td>2.3E-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>1.9E-06</td>
<td>0</td>
<td>NA</td>
<td>1.9E-06</td>
</tr>
<tr>
<td>Benzo(a)pyrene</td>
<td>101-82-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0023%</td>
<td>0</td>
<td>2.4E-06</td>
<td>0</td>
<td>NA</td>
<td>2.4E-06</td>
</tr>
<tr>
<td>Benzo(b)pyrene</td>
<td>192-97-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0078%</td>
<td>0.095%</td>
<td>8.0E-06</td>
<td>7.2E-06</td>
<td>NA</td>
<td>1.5E-05</td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>83-32-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.00037%</td>
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<td>3.8E-07</td>
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<td>NA</td>
<td>3.8E-07</td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-70-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.05%</td>
<td>0.15%</td>
<td>5.1E-05</td>
<td>5.1E-05</td>
<td>NA</td>
<td>1.6E-05</td>
</tr>
<tr>
<td>Pyrene</td>
<td>128-00-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.015%</td>
<td>0.44%</td>
<td>1.5E-04</td>
<td>3.4E-04</td>
<td>NA</td>
<td>4.9E-04</td>
</tr>
<tr>
<td>Phenol</td>
<td>PM/HAP</td>
<td>---</td>
<td>Organic PM</td>
<td>1.18%</td>
<td>0</td>
<td>1.2E-03</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.2E-03</td>
</tr>
</tbody>
</table>

**Other semi-volatile HAPs**

<table>
<thead>
<tr>
<th>Pollutant</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>Load-out</th>
<th>Silo Filling</th>
<th>Onsite Yard</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PAH HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Speciation Profile</td>
<td>Unlimited/Uncontrolled Potential to Emit (tons/yr)</td>
<td></td>
<td></td>
<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>1.2E-03</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.2E-03</td>
</tr>
</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><strong>VOC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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>0.052%</td>
<td>0.032%</td>
</tr>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>non-VOC/non-HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.049%</td>
<td>0.039%</td>
</tr>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
<td>non-VOC/non-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>Isobutene</td>
<td>540-84-1</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0018%</td>
<td>0.00031%</td>
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<td><strong>MTBE</strong></td>
<td>1634-04-4</td>
<td>VOC/HAP</td>
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<td>TOC</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>VOC</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>non-VOC/non-HAPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Benzene</strong></td>
<td>71-43-2</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0073%</td>
<td>0.0054%</td>
</tr>
<tr>
<td><strong>Tetrahydroethene</strong></td>
<td>127-18-6</td>
<td>non-VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0077%</td>
<td>0</td>
</tr>
<tr>
<td><strong>Toluene</strong></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><strong>1,1,1-Trichloroethane</strong></td>
<td>71-55-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Trichloroethene</strong></td>
<td>79-01-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Trichlorofluoromethane</strong></td>
<td>75-89-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0013%</td>
<td>0</td>
</tr>
<tr>
<td><strong>m,p-Xylene</strong></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><strong>o-Xylene</strong></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></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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.

\[ Ef = 1.7*\left(\frac{s}{1.5}\right)*\left(\frac{365-p}{235}\right)*\left(\frac{f}{15}\right) \]

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 #23</td>
<td>2.6</td>
<td>3.01</td>
<td>0.02</td>
<td>0.011</td>
<td>0.004</td>
</tr>
<tr>
<td>Limestone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#24</td>
<td>1.6</td>
<td>1.85</td>
<td>0.01</td>
<td>0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>#5</td>
<td>1.6</td>
<td>1.85</td>
<td>0.02</td>
<td>0.007</td>
<td>0.002</td>
</tr>
<tr>
<td>#11f</td>
<td>1.6</td>
<td>1.85</td>
<td>0.02</td>
<td>0.007</td>
<td>0.002</td>
</tr>
<tr>
<td>#11c</td>
<td>1.6</td>
<td>1.85</td>
<td>0.02</td>
<td>0.007</td>
<td>0.002</td>
</tr>
<tr>
<td>#8</td>
<td>1.6</td>
<td>1.85</td>
<td>0.02</td>
<td>0.007</td>
<td>0.002</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>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>

\[ \text{Totals} = 0.04 \quad 0.01 \]

**Methodology**
- PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (6760 hours/yr)
- PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**Maximum anticipated pile size (acres) provided by the source.

**RAP** - recycled asphalt pavement

**Abbreviations**
- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (<2.5 um)
- PM2.5 = PM10
- PTE = Potential to Emit
Appendix A.1: Unlimited Emissions Calculations

Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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.

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

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

\[ Ef \text{ (PM)} = 2.27 \times 10^{-3} \text{ lb PM/ton of material handled} \]
\[ Ef \text{ (PM10)} = 1.07 \times 10^{-3} \text{ lb PM10/ton of material handled} \]
\[ Ef \text{ (PM2.5)} = 1.62 \times 10^{-4} \text{ lb PM2.5/ton of material handled} \]

Maximum Annual Asphalt Production = 600,000 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 570,000 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>0.65</td>
<td>0.31</td>
<td>0.05</td>
</tr>
<tr>
<td>Front-end loader dumping of materials into feeder bins</td>
<td>0.65</td>
<td>0.31</td>
<td>0.05</td>
</tr>
<tr>
<td>Conveyor dropping material into dryer/mixer or batch tower</td>
<td>0.65</td>
<td>0.31</td>
<td>0.05</td>
</tr>
<tr>
<td><strong>Total (tons/yr)</strong></td>
<td>1.94</td>
<td>0.92</td>
<td>0.14</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 (lbs/ton)*</th>
<th>Uncontrolled Emission Factor for PM10 (lbs/ton)*</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>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>1.54</td>
<td>0.68</td>
</tr>
<tr>
<td>Screening</td>
<td>0.035</td>
<td>0.0087</td>
<td>7.13</td>
<td>2.48</td>
</tr>
<tr>
<td>Conveying</td>
<td>0.003</td>
<td>0.0011</td>
<td>0.86</td>
<td>0.31</td>
</tr>
<tr>
<td><strong>Unlimited Potential to Emit (tons/yr)</strong></td>
<td>9.52</td>
<td>3.48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Methodology

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

Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

**Assumes PM10 = PM2.5

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate matter (< 2.5 um)
PTE = Potential to Emit
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 API-42, Ch 13.2.2 (12/2003).

### Methodology

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

Maximum Asphalt Cement/Binder Throughput = [Maximum Asphalt Cement/Binder (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]

Maximum Weight of Vehicle and Load (tons/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum Trips per year (trip/yr)]

Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]

Average Miles Per Trip = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]

Average Vehicle Weight Per Trip = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]

Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]

Maximum Weight of Vehicle and Load (tons/yr) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]

Maximum No. 2 Fuel Oil Usage = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]

Average Vehicle Weight Per Trip = [Average Weight Per Trip (ton/trip)] / [Average Miles Per Trip (mi/trip)]

Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]

Maximum Weight of Vehicle (tons/trip) = [Maximum Weight of Vehicle and Load (tons/yr)] / [Maximum trips per year (trip/yr)]

Maximum Weight of Load (tons/trip) = [Maximum Weight of Vehicle and Load (tons/yr)] / [Maximum trips per year (trip/yr)]

Average Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]

Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Average Miles Per Trip (mi/trip)]

### Unmitigated Emission Factor

Unmitigated Emission Factor, \( E_f \) = \( k \cdot s^{a} \cdot W^{b} \)    (Equation 1a from AP-42 13.2.2)

where:

- \( k \) = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
- \( s \) = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
- \( W \) = average vehicle weight (provided by source)

### Controlled Emission Factor

Controlled Emission Factor, \( E_{ext} \) = \( E \cdot \frac{(365 - P)}{365} \)

where:

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

### Emissions Calculations

<table>
<thead>
<tr>
<th>Process</th>
<th>Vehicle Type</th>
<th>Maximum Weight of Vehicle and Load (tons/trip)</th>
<th>Maximum one-way distance (mi/trip)</th>
<th>Average Miles Per Trip</th>
<th>Average Vehicle Weight Per Trip (ton/trip)</th>
<th>Maximum Weight of Vehicle (tons/trip)</th>
<th>Maximum Weight of Load (tons/trip)</th>
<th>Maximum trips per year (trip/yr)</th>
<th>Maximum one-way distance (mi/trip)</th>
<th>Average Vehicle Weight Per Trip (ton/trip)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tri-Axle Truck</td>
<td>Dump truck (16 CY)</td>
<td>20.5</td>
<td>34.0</td>
<td>0.076</td>
<td>0.057</td>
<td>25.27</td>
<td>0.42</td>
<td>51.1</td>
<td>0.076</td>
<td>0.057</td>
</tr>
<tr>
<td>Quad Axle Truck</td>
<td>Dump truck (16 CY)</td>
<td>20.5</td>
<td>34.0</td>
<td>0.076</td>
<td>0.057</td>
<td>25.27</td>
<td>0.42</td>
<td>51.1</td>
<td>0.076</td>
<td>0.057</td>
</tr>
<tr>
<td>Tri-Axle Tractor</td>
<td>Tandem truck (6000 gal)</td>
<td>20.5</td>
<td>34.0</td>
<td>0.076</td>
<td>0.057</td>
<td>25.27</td>
<td>0.42</td>
<td>51.1</td>
<td>0.076</td>
<td>0.057</td>
</tr>
<tr>
<td>Process Vehicle Type</td>
<td>Unmitigated Emission Factor, ( E_f ) = ( k \cdot s^{a} \cdot W^{b} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process Vehicle Type</td>
<td>Controlled Emission Factor, ( E_{ext} ) = ( E \cdot \frac{(365 - P)}{365} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Unpaved Roads

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Maximum one-way distance (mi/trip)</th>
<th>Average Miles Per Trip (mi/trip)</th>
<th>Maximum one-way distance (mi/trip)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unpaved Roads at Industrial Site</td>
<td>0.076</td>
<td>0.057</td>
<td>25.27</td>
</tr>
</tbody>
</table>

### Abbreviations

- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (<2.5 um)
- PTE = Potential to Emit
### Paved Roads

#### 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).

<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 Year (trip/yr)</th>
<th>Maximum One-Way Distance (mi/trip)</th>
<th>Maximum One-Way Distance (miles/yr)</th>
<th>Maximum Weight of Load (tons/trip)</th>
<th>Maximum Weight of Load (tons/yr)</th>
<th>Total Weight Driven per Year (ton/yr)</th>
<th>Maximum Asphalt Cement/Binder Throughput = 30,000 tons/yr</th>
<th>Maximum Material Handling Throughput = 570,000 tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate/CR Truck Enter Full</td>
<td>Dump truck (16 CY)</td>
<td>15.0</td>
<td>4.0</td>
<td>19.0</td>
<td>1.4E+05</td>
<td>4.3E+05</td>
<td>300</td>
<td>0.057</td>
<td>1420.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate/CR Truck Leave Full</td>
<td>Dump truck (16 CY)</td>
<td>17.0</td>
<td>4.0</td>
<td>21.0</td>
<td>2.5E+04</td>
<td>6.3E+05</td>
<td>300</td>
<td>0.057</td>
<td>1420.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate/CR Loader Empty</td>
<td>Front-end loader (3 CY)</td>
<td>15.0</td>
<td>0.0</td>
<td>15.0</td>
<td>1.4E+05</td>
<td>2.0E+06</td>
<td>300</td>
<td>0.057</td>
<td>7711.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate/CR Loader Full</td>
<td>Front-end loader (3 CY)</td>
<td>17.0</td>
<td>0.0</td>
<td>17.0</td>
<td>2.5E+04</td>
<td>4.3E+05</td>
<td>300</td>
<td>0.057</td>
<td>1420.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Methodology

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

#### Abbreviations

- **PM** = Particulate Matter
- **PM10** = Particulate Matter (<10 um)
- **PM2.5** = Particulate Matter (<2.5 um)
- **PM = Particulate Matter**

---

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

**Paved Roads**

- **Company Name:** Calcar Quarry
- **Source Address:** 860 East US Highway 190, Paris, Indiana 47544
- **Renewal:** 117-4397-0320
- **Reviewer:** Dylan Finley
**Appendix A.1: Unlimited Emissions Calculations**

Cold Mix Asphalt Production and Stockpiles

**Company Name:** Calcar Quarry  
**Source Address:** 860 East US Highway 150, Paoli, Indiana 47454  
**Renewal:** 117-43007-03220  
**Reviewer:** Dylan Finley

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>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>Cut back asphalt medium cure (assuming kerosene solvent)</td>
<td>25.3%</td>
<td>95.0%</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Cut back asphalt slow cure (assuming fuel oil solvent)</td>
<td>28.6%</td>
<td>70.0%</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)</td>
<td>20.0%</td>
<td>25.0%</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other asphalt with solvent binder</td>
<td>15.0%</td>
<td>46.4%</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Maximum Asphalt Production =** 600,000 tons/yr  
**Percent Asphalt Cement/Binder (weight %) =** 0.0%  
**Maximum Asphalt Cement/Binder Throughput =** 0 tons/yr

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.

### Hazardous Air Pollutants

**Worst Case Total HAP Content of VOC solvent (weight %)* =** 26.08%  
**Worst Case Single HAP Content of VOC solvent (weight %)* =** 9.0% Xylenes

### 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</th>
<th>No. 2 Fuel Oil</th>
<th>No. 6 Fuel Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3-Butadiene</td>
<td>108-99-0</td>
<td>3.70E-5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2,4-Trimethylpentane</td>
<td>94-84-1</td>
<td>2.40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>53-32-9</td>
<td>4.70E-5%</td>
<td>1.00E-5%</td>
<td></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>5.60E-5%</td>
<td>2.80E-5%</td>
<td></td>
<td>5.00E-5%</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>1.90%</td>
<td>2.00E-4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzene(anthracene)</td>
<td>56-55-3</td>
<td>9.00E-7%</td>
<td>2.00E-7%</td>
<td>5.00E-7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzo[a]pyrene</td>
<td>90-32-8</td>
<td>2.20E-6%</td>
<td>2.00E-6%</td>
<td>4.00E-6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzo[a]pyrene</td>
<td>91-24-2</td>
<td>1.20E-7%</td>
<td>5.70E-8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biphenyl</td>
<td>92-52-4</td>
<td>6.30E-4%</td>
<td>7.20E-5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chrysene</td>
<td>218-01-9</td>
<td>4.50E-7%</td>
<td>1.40E-6%</td>
<td>6.00E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>106-41-4</td>
<td>0.07%</td>
<td>3.40E-4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<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>86-77-3</td>
<td>4.20E-5%</td>
<td>8.60E-4%</td>
<td>1.90E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indeno[1,2,3-cd]pyrene</td>
<td>193-38-5</td>
<td>1.50E-7%</td>
<td>1.00E-4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl tert-butylether</td>
<td>1834-04-4</td>
<td>0.33%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<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-Hexane</td>
<td>110-84-3</td>
<td>2.40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>95-01-8</td>
<td>8.60E-6%</td>
<td>8.60E-4%</td>
<td>7.90E-4%</td>
<td>2.10E-4%</td>
<td></td>
</tr>
<tr>
<td>Pyrene</td>
<td>129-90-0</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>0.18%</td>
<td>0.20E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Xylenes</td>
<td>1330-20-7</td>
<td>0.50%</td>
<td>0.23%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Organic HAPs**  
**26.68%**

**Worst Single HAP**  
**9.00%**

**Xylenes**  
**0.31%**

**Naphthalene**  
**0.50%**

**Xylenes**  
**0.23%**

**Chrysene**  
**0.07%**

### 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 Single 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: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43067-03220
Reviewer: Dylan Finley

Gasoline Throughput = 20 gallons/day
= 7.3 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>0.001</td>
</tr>
<tr>
<td>Tank breathing and emptying</td>
<td>1.0</td>
<td>0.004</td>
</tr>
<tr>
<td>Vehicle refueling (displaced losses - controlled)</td>
<td>1.1</td>
<td>0.004</td>
</tr>
<tr>
<td>Spillage</td>
<td>0.7</td>
<td>0.003</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>0.01</td>
</tr>
</tbody>
</table>

Hazardous Air Pollutants

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Worst Case Total HAP Content of VOC solvent (weight %)* =</td>
<td>26.08%</td>
</tr>
<tr>
<td>Worst Case Single HAP Content of VOC solvent (weight %)* =</td>
<td>9.0% Xylenes</td>
</tr>
<tr>
<td>Limited PTE of Total HAPs (tons/yr) =</td>
<td>0.003 Xylenes</td>
</tr>
<tr>
<td>Limited PTE of Single HAP (tons/yr) =</td>
<td>0.001 Xylenes</td>
</tr>
</tbody>
</table>

Methodology
The gasoline throughput was provided by the source.
Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]
PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]
PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]
PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

Appendix A.1: Unlimited Emissions Calculations

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

Drilling and Blasting

**DRILLING AND BLASTING INFO**

<table>
<thead>
<tr>
<th>Blasting rate</th>
<th>18.00 blasts/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holes per blast</td>
<td>27.11 holes/blast - average</td>
</tr>
<tr>
<td>Holes drilled per year</td>
<td>488 holes/year</td>
</tr>
<tr>
<td>Area Shifted per Blast</td>
<td>1,713.3 square foot/blast - average</td>
</tr>
</tbody>
</table>

**Methodology**

\[ \text{Holes drilled per year (holes/year)} = \text{Blasting rate (blasts/year)} * \text{Holes per blast (holes/blast)} \]

**DRILLING AND BLASTING**

**Blasting PM Emission Factor**

\[ \text{PM Ef} = 0.000014(A)^{1.5} \]

where \( \text{PM Ef} \) = PM emission factor (lb/blast)
\( A \) = horizontal area (ft²), with blasting depth less than or equal to 70 ft

\[ \text{PM Ef} = 0.99 \text{ lb/blast} \]

PM10 Scaling Factor* = 0.52
PM2.5 Scaling Factor* = 0.03

**EXPLOSIVES**

<table>
<thead>
<tr>
<th>Explosive Type</th>
<th>Usage (lbs/hour)</th>
<th>Usage (tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANFO</td>
<td>16.00</td>
<td>70</td>
</tr>
<tr>
<td>Dynamite, Straight</td>
<td>0.07</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Explosive Type</th>
<th>Emission Factor (lbs/ton)</th>
<th>PTE (tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANFO</td>
<td>67</td>
<td>17</td>
</tr>
<tr>
<td>Dynamite, Straight</td>
<td>281</td>
<td>0</td>
</tr>
</tbody>
</table>

**Methodology**

Explosives emission factors from AP-42 Chapter 13.3, Table 13.3-1.

Usage (tons/year) = [Usage (lbs/hour)] * [8760 hours/year] * [ton/2000 lbs]

Uncontrolled PTE (tons/year) = [Emission Factors (lbs/ton)] * [Usage (tons/year)] * [ton/2000 lbs]
Appendix A.1: Unlimited Emissions Calculations
Crushed Stone Plant Material Storage Piles
Fugitive Emissions

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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 #24</td>
<td>2.6</td>
<td>3.01</td>
<td>0.09</td>
<td>0.049</td>
<td>0.017</td>
</tr>
<tr>
<td>Limestone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#73</td>
<td>1.6</td>
<td>1.85</td>
<td>0.14</td>
<td>0.047</td>
<td>0.017</td>
</tr>
<tr>
<td>#Fill</td>
<td>1.6</td>
<td>1.85</td>
<td>0.14</td>
<td>0.047</td>
<td>0.017</td>
</tr>
<tr>
<td>#53</td>
<td>1.6</td>
<td>1.85</td>
<td>0.15</td>
<td>0.051</td>
<td>0.018</td>
</tr>
<tr>
<td>#11f</td>
<td>1.6</td>
<td>1.85</td>
<td>0.05</td>
<td>0.017</td>
<td>0.006</td>
</tr>
<tr>
<td>#11c</td>
<td>1.6</td>
<td>1.85</td>
<td>0.01</td>
<td>0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>#11b-borrow</td>
<td>1.6</td>
<td>1.85</td>
<td>0.05</td>
<td>0.017</td>
<td>0.006</td>
</tr>
<tr>
<td>#8</td>
<td>1.6</td>
<td>1.85</td>
<td>0.23</td>
<td>0.078</td>
<td>0.027</td>
</tr>
<tr>
<td>#2 Stone</td>
<td>1.6</td>
<td>1.85</td>
<td>0.15</td>
<td>0.051</td>
<td>0.018</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>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 0.36 0.13 (Fugitive)

Methodology

\[ \text{PTE of PM (tons/yr)} = (\text{Emission Factor (lb/acre/day)}) \times (\text{Maximum Pile Size (acres)\}) \times (\text{ton/2000 lbs}) \times (8760 \text{ hours/yr}) \]

\[ \text{PTE of PM10/PM2.5 (tons/yr)} = (\text{Potential PM Emissions (tons/yr)}) \times 35\% \]

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)
**Maximum anticipated pile size (acres) provided by the source.

RAP = recycled asphalt pavement

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PM2.5 = PM10
PTE = Potential to Emit
Appendix A.1: Unlimited Emissions Calculations

Crushed Stone Plant Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

Dropping of Crushed Material into Storage Piles and Trucks (Fugitive)

To estimate potential fugitive emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling And Storage Piles, Section 13.2.4 (Fifth edition, 11/06) are utilized.

\[
Ef = k'(0.0032)/[(U/5)^{1.3} / (M/2)^{1.4}]
\]

where:

- \(Ef\) = Emission factor (lb/ton)
- \(k\) (PM) = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
- \(k\) (PM10) = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
- \(k\) (PM2.5) = particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
- \(U\) = worst case annual mean wind speed (Source: NOAA, 2006*)
- \(M\) = material % moisture content of aggregate (Source: AP-42 Section 11.1.1)

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

Maximum Annual Crushed Stone Production = 3,504,000 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>3.97</td>
<td>1.88</td>
<td>0.28</td>
</tr>
<tr>
<td>Loading of materials into truck</td>
<td>3.97</td>
<td>1.88</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Total Fugitive Emissions (tons/yr) = 7.94

Material Crushing, Screening, and Conveying (Non-Fugitive)

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>Operation</th>
<th>Maximum Capacity (tons/hr)</th>
<th>Uncontrolled Emission Factor for PM (lbs/ton)*</th>
<th>Uncontrolled Emission Factor for PM10 (lbs/ton)*</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>Jaw Crusher #1CR</td>
<td>Crushing</td>
<td>100</td>
<td>0.0054</td>
<td>0.0024</td>
<td>2.37</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Standard Crusher #2CR</td>
<td>Crushing</td>
<td>100</td>
<td>0.0054</td>
<td>0.0024</td>
<td>2.37</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Short Head Crusher #3CR</td>
<td>Crushing</td>
<td>100</td>
<td>0.0054</td>
<td>0.0024</td>
<td>2.37</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Secco Screen #1SC</td>
<td>Screening</td>
<td>100</td>
<td>0.025</td>
<td>0.0087</td>
<td>10.95</td>
<td>3.81</td>
<td></td>
</tr>
<tr>
<td>Secco Screen #2SC</td>
<td>Screening</td>
<td>100</td>
<td>0.025</td>
<td>0.0087</td>
<td>10.95</td>
<td>3.81</td>
<td></td>
</tr>
<tr>
<td>21 Belt Conveyors, #1B, #1BC, #18BC, #19BC, #20BC, #23BC and #24BC</td>
<td>Conveying</td>
<td>2100</td>
<td>0.003</td>
<td>0.0011</td>
<td>27.59</td>
<td>10.12</td>
<td></td>
</tr>
<tr>
<td>Radial Stacker #1TRS</td>
<td>Conveying</td>
<td>100</td>
<td>0.003</td>
<td>0.0011</td>
<td>1.31</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>Radial Stacker #2TRS</td>
<td>Conveying</td>
<td>100</td>
<td>0.003</td>
<td>0.0011</td>
<td>1.31</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>Radial Stacker #3TRS</td>
<td>Conveying</td>
<td>100</td>
<td>0.003</td>
<td>0.0011</td>
<td>1.31</td>
<td>0.48</td>
<td></td>
</tr>
</tbody>
</table>

Unlimited Potential to Emit (tons/yr) = 62.90

Material Crushing, Screening, and Conveying (Non-Fugitive)

Methodology

Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/hr)] * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Raw materials may include limestone, sand, recycled asphalt pavement (RAP), concrete, gravel, slag, and other additives

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

Unlimited Potential to Emit (tons/yr) = [Maximum Annual Crushed Stone Production (tons/yr)] * (Emission Factor (lb/ton)) * (ton/2000 lbs)

**Assumes PM10 = PM2.5**

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate matter (< 2.5 um)
PTE = Potential to Emit
Appendix A.1: Unlimited Emissions Calculations
Fugitive Dust Emissions - Unpaved Roads
Crushed Stone Plant

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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).

Vehicle Information (provided by source)

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum number of vehicles</th>
<th>Maximum trips per day (trip/day)</th>
<th>Maximum Weight Loaded per trip (tons/trip)</th>
<th>Total Weight Driven per day (ton/day)</th>
<th>Maximum one-way distance (ft/trip)</th>
<th>Maximum one-way distance (miles/day)</th>
<th>Maximum one-way miles (miles/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center plant (1 way trip)/Tri-axle truck</td>
<td>8.0</td>
<td>3.0</td>
<td>24.0</td>
<td>68.0</td>
<td>1632.0</td>
<td>400</td>
<td>0.076</td>
</tr>
<tr>
<td>(leaving plant) (1 way trip)/Tri-axle truck</td>
<td>8.0</td>
<td>3.0</td>
<td>24.0</td>
<td>68.0</td>
<td>1632.0</td>
<td>400</td>
<td>0.076</td>
</tr>
<tr>
<td>Center plant (1 way trip)/Quad-axle truck</td>
<td>2.0</td>
<td>5.0</td>
<td>10.0</td>
<td>73.0</td>
<td>730.0</td>
<td>400</td>
<td>0.076</td>
</tr>
<tr>
<td>(leaving plant) (1 way trip)/Quad-axle truck</td>
<td>2.0</td>
<td>5.0</td>
<td>10.0</td>
<td>73.0</td>
<td>730.0</td>
<td>400</td>
<td>0.076</td>
</tr>
<tr>
<td>Center plant (1 way trip)/Tractor Trailor</td>
<td>1.0</td>
<td>5.0</td>
<td>5.0</td>
<td>73.0</td>
<td>365.0</td>
<td>400</td>
<td>0.076</td>
</tr>
<tr>
<td>(leaving plant) (1 way trip)/Tractor Trailor</td>
<td>1.0</td>
<td>5.0</td>
<td>5.0</td>
<td>73.0</td>
<td>365.0</td>
<td>400</td>
<td>0.076</td>
</tr>
</tbody>
</table>

Total: 78.0 5454.0 5.9 2156.8

Average Vehicle Weight Per Trip = \[
\frac{69.9}{69} = 1.0\] tons/trip

Average Miles Per Trip = 0.08 miles/trip

Unmitigated Emission Factor, \( Ef = k[(s/12)^a][W/3]^b \)

where:
- \( k = 4.9 \) for Industrial Roads
- \( s = 4.8 \) for mean % silt content of unpaved roads
- \( a = 0.7 \) for constant
- \( W = 69.9 \) tons average vehicle weight
- \( b = 0.45 \) for constant

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

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

Unmitigated Emission Factor, \( Ef = 10.64 \) lb/mile

Mitigated Emission Factor, \( E_{ext} = 7.00 \) lb/mile

Dust Control Efficiency = 50% (pursuant to control measures outlined in fugitive dust control plan)

Methodology

Total Weight Driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]

Maximum one-way distance (ft/trip) = [Maximum one-way distance (ft/trip)] / [5280 ft/mile]

Maximum one-way miles (miles/day) = [Maximum one-way distance (ft/trip)] / [5280 ft/mile]

Average Vehicle Weight Per Trip (ton/trip) = (Total Weight driven per day (ton/day)) / (Maximum trips per day (trip/day))

Average Miles Per Trip (miles/trip) = (Maximum one-way miles (miles/day)) / (Maximum trips per day (trip/day))

Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit
### Limited/Controlled Fugitive Emissions from the Quarry Operations**

<table>
<thead>
<tr>
<th>Process Description</th>
<th>Criteria Pollutants</th>
<th>Hazardous Air Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PM</td>
<td>PM2.5</td>
</tr>
<tr>
<td>Fugitive Emissions (Quarry)</td>
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<td></td>
</tr>
<tr>
<td>Material Crushing, Screening, and Conveying</td>
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<td>0.35</td>
</tr>
<tr>
<td>Material Processing and Handling (Drop Points)</td>
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<td>0.35</td>
</tr>
<tr>
<td>Material Storage Piles</td>
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</tr>
<tr>
<td>Drilling and Blasting</td>
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<td>0.35</td>
</tr>
<tr>
<td>Fugitive Emissions (Asphalt Plant)</td>
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<tr>
<td>Hot Oil Heater Fuel Combustion (worst case)</td>
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<tr>
<td>Dryer/Mixer Slag Processing</td>
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<tr>
<td>Dryer/Mixer and Batch Tower (Process)</td>
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<td>Dryer Fuel Combustion (worst case)</td>
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<td>Ducted Emissions</td>
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<tr>
<td>Process Description</td>
<td>Limited/Controlled Potential Emissions (Assumes)</td>
<td>Limited/Controlled Emissions Summary</td>
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<tr>
<td></td>
<td>PM</td>
<td>PM2.5</td>
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<tr>
<td>Limited/Controlled Fugitive Emissions from the Quarry Operations**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material Crushing, Screening, and Conveying</td>
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<td>0.35</td>
</tr>
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<td>Material Processing and Handling (Drop Points)</td>
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<tr>
<td>Material Storage Piles</td>
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<td>0.35</td>
</tr>
<tr>
<td>Drilling and Blasting</td>
<td>0.27</td>
<td>0.35</td>
</tr>
</tbody>
</table>

**Notes:**

1. USEPA apportioned fuel combustion data based on the fuel with the highest emissions for each specific pollutant.

2. Based on information provided by the source, the quarry operation is considered to be a secondary activity that was in effect on August 7, 1980; therefore, fugitive emissions from the quarry operation (blasting, material handling, and storage, among others) are not counted toward the determination of PTO and PTE permit applicability.
### Limited Emissions

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas (lb/MMCF)</th>
<th>No. 2 Fuel Oil (lb/1000 gal)</th>
<th>No. 4 Fuel Oil (lb/1000 gal)</th>
<th>Propane (lb/1000 gal)</th>
<th>Butane (lb/1000 gal)</th>
<th>Used Waste Oil Limitation (lb/1000 gal)</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 Limitation (tons/yr)</th>
<th>Worst Case Fuel Oil (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>1.9</td>
<td>2.0</td>
<td>7.6</td>
<td>7.815</td>
<td>0.6</td>
<td>0.6</td>
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<tr>
<td>PM10</td>
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<td>7.1</td>
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<td>0.2</td>
<td>0.13</td>
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<td>98.78</td>
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<tr>
<td>NOx</td>
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<td>VOC</td>
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<td>1.0</td>
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<td>CO</td>
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<td>5.0</td>
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<td>6.4</td>
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<td>6.45</td>
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<td>16.00</td>
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</table>

#### Hazardous Air Pollutants

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas (lb/MMCF)</th>
<th>No. 2 Fuel Oil (lb/1000 gal)</th>
<th>No. 4 Fuel Oil (lb/1000 gal)</th>
<th>Propane (lb/1000 gal)</th>
<th>Butane (lb/1000 gal)</th>
<th>Used Waste Oil Limitation (lb/1000 gal)</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 Limitation (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylamide</td>
<td>2,3E-04</td>
<td>2,3E-04</td>
<td>2,3E-04</td>
<td>2,3E-04</td>
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</table>

#### Total HAPs

<table>
<thead>
<tr>
<th>Hap</th>
<th>Natural Gas (lb/MMCF)</th>
<th>No. 2 Fuel Oil (lb/1000 gal)</th>
<th>No. 4 Fuel Oil (lb/1000 gal)</th>
<th>Propane (lb/1000 gal)</th>
<th>Butane (lb/1000 gal)</th>
<th>Used Waste Oil Limitation (lb/1000 gal)</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 Limitation (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(2-ethylhexyl)phthalate</td>
<td>7,1E-03</td>
<td>7,1E-03</td>
<td>7,1E-03</td>
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<tr>
<td>Bisphenol A</td>
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<td>1,7E-02</td>
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<td>1,7E-02</td>
<td>1,7E-02</td>
<td>1,7E-02</td>
</tr>
<tr>
<td>Brominated Rubber</td>
<td>1,7E-02</td>
<td>1,7E-02</td>
<td>1,7E-02</td>
<td>1,7E-02</td>
<td>1,7E-02</td>
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<td>1,7E-02</td>
<td>1,7E-02</td>
<td>1,7E-02</td>
<td>1,7E-02</td>
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<tr>
<td>Total HAPs</td>
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<td>6,5E-05</td>
<td>6,5E-05</td>
<td>6,5E-05</td>
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<td>6,5E-05</td>
<td>6,5E-05</td>
<td>6,5E-05</td>
<td>6,5E-05</td>
</tr>
</tbody>
</table>

#### Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr))^*(Emission Factor (lb/MMCF))

All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr))^*(Emission Factor (lb/gal))

Abbreviations:
- PM = Particulate Matter
- HAP = Hazardous Air Pollutant
- PM10 = Particulate Matter (>10 um)
- HCl = Hydrogen Chloride
- SO2 = Sulfur Dioxide
- PAN = Polyatomic Hydrocarbon
- NOx = Nitrous Oxides
- VOC = Volatile Organic Compounds
- CO = Carbon Monoxide
- Haps = Hazardous Air Pollutants

*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.

---

**For the complete document, please refer to the Appendix A.2 on Limited Emissions Summary.**
The following calculations determine the limited emissions from the aggregate drying/mixing and the batch tower.

### Criteria Pollutant

| Pollutant | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil | Natural Gas | No. 2 Fuel Oil | Waste Oil |
|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|-------------|----------------|-----------|
| PM        | 0.738       | 0.738          | 0.738     | 182.0       | 182.0          | 182.0     | 182.0       | 182.0          | 182.0     | 182.0       | 182.0          | 182.0     | 182.0       | 182.0          | 182.0     | 182.0       | 182.0          | 182.0     | 182.0       | 182.0          | 182.0     |
| PM10      | 0.303       | 0.303          | 0.303     | 74.6        | 74.6           | 74.6      | 74.6        | 74.6           | 74.6      | 74.6        | 74.6           | 74.6      | 74.6        | 74.6           | 74.6      | 74.6        | 74.6           | 74.6      | 74.6        | 74.6           | 74.6      |
| PM2.5      | 0.149       | 0.149          | 0.149     | 19.5        | 19.5           | 19.5      | 19.5        | 19.5           | 19.5      | 19.5        | 19.5           | 19.5      | 19.5        | 19.5           | 19.5      | 19.5        | 19.5           | 19.5      | 19.5        | 19.5           | 19.5      |
| SO2       | 0.0046      | 0.058          | 0.088     | 1.1         | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      |
| NOx       | 0.0526      | 0.12           | 0.12      | 0.2         | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      | 21.7        | 21.7           | 21.7      |
| VOC       | 0.036       | 0.036          | 0.036     | 0.8         | 8.9            | 8.9       | 8.9         | 8.9            | 8.9       | 8.9         | 8.9            | 8.9       | 8.9         | 8.9            | 8.9       | 8.9         | 8.9            | 8.9       | 8.9         | 8.9            | 8.9       |
| CO       | 0.400       | 0.400          | 0.400     | 98.6        | 98.6           | 98.6      | 98.6        | 98.6           | 98.6      | 98.6        | 98.6           | 98.6      | 98.6        | 98.6           | 98.6      | 98.6        | 98.6           | 98.6      | 98.6        | 98.6           | 98.6      |

### Hazardous Air Pollutants

<table>
<thead>
<tr>
<th>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>
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<tbody>
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<td>Acetaldehyde</td>
<td>3.20E-04</td>
<td>3.20E-04</td>
<td>3.20E-04</td>
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<td>0.08</td>
<td>0.08</td>
</tr>
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<td>Benzene</td>
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<td>2.80E-04</td>
<td>0.07</td>
<td>0.07</td>
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<tr>
<td>Ethylbenzene</td>
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<td>2.20E-03</td>
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<td>0.54</td>
<td>0.54</td>
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<tr>
<td>Formaldehyde</td>
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<td>7.40E-04</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Methodology**

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.

* SO2 and NOx 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 batch mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

** Abbreviations**

- **VOC**: Volatile Organic Compounds
- **HAP**: Hazardous Air Pollutant
- **HCl**: Hydrogen Chloride
- **PAH**: Polyaromatic Hydrocarbon
- **SO2**: Sulfur Dioxide
Appendix A.2: Limited Emissions Summary
Dryer/Mixer Slag Processing

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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

Slag Usage Limitation = 0 ton/yr
SO2 Slag Limitation = 0.000 lb/ton of slag processed

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Emission Factor or Limitation (lb/ton)*</th>
<th>Limited Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO2</td>
<td>0.000</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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

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

Abbreviations
SO2 = Sulfur Dioxide
### 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>Natural Gas (tons/yr)</th>
<th>No. 2 Fuel Oil (tons/yr)</th>
<th>Worse Case Fuel (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
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<td>2.0</td>
<td>0.008</td>
<td>0.063</td>
<td>0.06</td>
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<td>PM10/PM2.5</td>
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<td>NOx</td>
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<td>0.438</td>
<td>0.626</td>
<td>0.63</td>
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<tr>
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<td>0.024</td>
<td>0.006</td>
<td>0.02</td>
</tr>
<tr>
<td>CO</td>
<td>84</td>
<td>5.0</td>
<td>0.368</td>
<td>0.196</td>
<td>0.37</td>
</tr>
</tbody>
</table>

### hazardous Air Pollutants

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Natural Gas (lb/MMCF)</th>
<th>No. 2 Fuel Oil (lb/kgal)</th>
<th>Natural Gas (tons/yr)</th>
<th>No. 2 Fuel Oil (tons/yr)</th>
<th>Worse Case Fuel (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>2.0E-04</td>
<td>5.6E-04</td>
<td>8.8E-07</td>
<td>1.75E-05</td>
<td>1.8E-05</td>
</tr>
<tr>
<td>Beryllium</td>
<td>1.2E-05</td>
<td>4.2E-04</td>
<td>5.3E-08</td>
<td>1.31E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Cadmium</td>
<td>1.1E-03</td>
<td>4.2E-04</td>
<td>4.2E-06</td>
<td>1.31E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Chromium</td>
<td>1.4E-03</td>
<td>4.2E-04</td>
<td>1.0E-06</td>
<td>1.31E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Cobalt</td>
<td>8.4E-05</td>
<td>3.7E-07</td>
<td>3.7E-07</td>
<td>3.7E-07</td>
<td>3.7E-07</td>
</tr>
<tr>
<td>Lead</td>
<td>5.0E-04</td>
<td>1.3E-03</td>
<td>2.2E-06</td>
<td>3.94E-05</td>
<td>3.9E-05</td>
</tr>
<tr>
<td>Manganese</td>
<td>3.6E-04</td>
<td>8.4E-04</td>
<td>1.7E-06</td>
<td>2.63E-05</td>
<td>2.6E-05</td>
</tr>
<tr>
<td>Mercury</td>
<td>2.6E-04</td>
<td>4.2E-04</td>
<td>1.1E-06</td>
<td>1.31E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Nickel</td>
<td>2.1E-03</td>
<td>4.2E-04</td>
<td>9.2E-06</td>
<td>1.31E-05</td>
<td>1.3E-05</td>
</tr>
<tr>
<td>Selenium</td>
<td>2.4E-05</td>
<td>2.1E-03</td>
<td>1.1E-07</td>
<td>6.57E-05</td>
<td>6.6E-05</td>
</tr>
<tr>
<td>Benzene</td>
<td>2.1E-03</td>
<td>9.2E-06</td>
<td>9.2E-06</td>
<td>9.2E-06</td>
<td>9.2E-06</td>
</tr>
<tr>
<td>Dichlorobenzene</td>
<td>1.2E-03</td>
<td>5.3E-06</td>
<td>5.3E-06</td>
<td>5.3E-06</td>
<td>5.3E-06</td>
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<tr>
<td>Ethylbenzene</td>
<td>0</td>
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<tr>
<td>Formaldehyde</td>
<td>7.5E-02</td>
<td>6.1E-02</td>
<td>3.3E-04</td>
<td>1.91E-03</td>
<td>0.002</td>
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<tr>
<td>Hexane</td>
<td>1.8E+00</td>
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<td>0.01</td>
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<td>0.008</td>
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<tr>
<td>Phenol</td>
<td>0</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total PAH Haps</td>
<td>3.4E-03</td>
<td>1.5E-05</td>
<td></td>
<td></td>
<td>1.5E-05</td>
</tr>
<tr>
<td>Polycyclic Organic Matter</td>
<td>3.3E-03</td>
<td>1.0E-04</td>
<td>1.0E-04</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total HAPs** = 8.3E-03 + 2.2E-03 + 0.010

### methodology

Equivalent Natural Gas Usage (MMCF/yr) = \[\text{Maximum Fuel Input Rate (MMBtu/hr)} \times 0.76 \times 8760 \times 1\] MMBtu/100 MMBtu

Equivalent Oil Usage (gal/yr) = \[\text{Maximum Fuel Input Rate (MMBtu/hr)} \times 0.84 \times 8760 \times 1 \] gal/100 MMBtu

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

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

Sources of AP-42 Emission Factors for fuel combustion:

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

### abbreviations

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

**Asphalt Load-Out, Silo Filling, and Yard Emissions**

**Company Name:** Calcar Quarry  
**Source Address:** 860 East US Highway 150, Paoli, Indiana 47454  
**Renewal:** 117-43007-03220  
**Reviewer:** Dylan Finley

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.

<table>
<thead>
<tr>
<th>Pollutant</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>
</tr>
<tr>
<td>Organic PM</td>
<td>3.4E-04</td>
<td>2.5E-04</td>
<td>NA</td>
<td>0.08</td>
</tr>
<tr>
<td>TOC</td>
<td>0.004</td>
<td>0.012</td>
<td>0.001</td>
<td>1.03</td>
</tr>
<tr>
<td>CO</td>
<td>0.001</td>
<td>0.001</td>
<td>3.5E-04</td>
<td>0.33</td>
</tr>
</tbody>
</table>

**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** = 0.000181 + 0.00141(-V)e^((0.0251)(T+460)-20.43)
- **Organic PM Ef** = 0.000332 + 0.00105(-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):

- **Total PM/PM10 Ef** = 0.000332 + 0.00105(-V)e^((0.0251)(T+460)-20.43)
- **Organic PM Ef** = 0.00105(-V)e^((0.0251)(T+460)-20.43)
- **TOC Ef** = 0.0504(-V)e^((0.0251)(T+460)-20.43)
- **CO Ef** = 0.00488(-V)e^((0.0251)(T+460)-20.43)

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

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

### Emission Factors

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Load-Out</th>
<th>Silo Filling</th>
<th>On-Site Yard</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM/HAPs</td>
<td>0.006</td>
<td>0.007</td>
<td>0</td>
<td>0.013</td>
</tr>
<tr>
<td>VOC/HAPs</td>
<td>0.015</td>
<td>0.038</td>
<td>0.004</td>
<td>0.057</td>
</tr>
<tr>
<td>non-VOC/HAPs</td>
<td>7.9E-05</td>
<td>8.1E-06</td>
<td>2.1E-05</td>
<td>1.1E-04</td>
</tr>
<tr>
<td>non-VOC/non-HAPs</td>
<td>0.07</td>
<td>0.04</td>
<td>0.02</td>
<td>0.14</td>
</tr>
</tbody>
</table>

| Total VOCs | 0.96 | 3.00 | 0.3 | 4.2 |
| Total HAPs | 0.02 | 0.05 | 0.004 | 0.07 |
| Worst Single HAP | 0.022 | (formaldehyde) |
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>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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Load-out</td>
<td>Silo Filling</td>
<td>Onsite Yard</td>
</tr>
<tr>
<td>PAH HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Load-out and Onsite Yard (%) by weight of Total Organic PM</td>
<td>Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)</td>
<td>Load-out</td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>83-32-9</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.026%</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>2.4E-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>5.9E-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>6.4E-06</td>
</tr>
<tr>
<td>Benzo(k)fluoranthene</td>
<td>207-09-9</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>1.6E-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>1.9E-06</td>
</tr>
<tr>
<td>Benzo(b)pyrene</td>
<td>192-97-2</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.0078%</td>
<td>0.009%</td>
<td>6.6E-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>8.7E-05</td>
</tr>
<tr>
<td>Dibenz(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>
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<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>
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</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>6.5E-04</td>
</tr>
<tr>
<td>Indeno(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>4.0E-07</td>
</tr>
<tr>
<td>2-Methylnaphthalene</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>1.25%</td>
<td>1.82%</td>
<td>1.1E-03</td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-01-8</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>Pyrene</td>
<td>129-00-0</td>
<td>PM/HAP</td>
<td>POM</td>
<td>Organic PM</td>
<td>0.31%</td>
<td>1.80%</td>
<td>6.8E-04</td>
</tr>
</tbody>
</table>

Total PAH HAPs: 0.005 0.007 NA 0.012

Other semi-volatile HAPs: Phenol

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
### 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>Load-out and Onsite Yard (% by weight of TOC)</th>
<th>Silo Filling and Asphalt Storage Tank (% by weight of TOC)</th>
<th>Load-out</th>
<th>Silo Filling</th>
<th>Onsite Yard</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>VOC</td>
<td>---</td>
<td>TOC</td>
<td>94%</td>
<td>100%</td>
<td>0.96</td>
<td>3.00</td>
<td>0.25</td>
<td>4.22</td>
<td></td>
</tr>
<tr>
<td>non-VOC/non-HAPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<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>
<td>6.7E-02</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>7.8E-03</td>
<td>1.8E-02</td>
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<td></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>
<td>4.7E-04</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>1.7E-03</td>
<td>1.2E-04</td>
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</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>
<td>7.3E-03</td>
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</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>3.3E-02</td>
<td>1.9E-03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total non-VOC/non-HAPS</td>
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<td></td>
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<td>7.30%</td>
<td>1.40%</td>
<td>0.075</td>
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<td></td>
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</tr>
<tr>
<td>Volatile organic HAPs</td>
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<td></td>
<td></td>
<td></td>
<td>7.30%</td>
<td>1.40%</td>
<td>0.075</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>
<td>5.3E-04</td>
<td></td>
<td></td>
<td></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>
<td>9.8E-05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.5E-04</td>
<td>2.6E-05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Butanone</td>
<td>78-90-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.049%</td>
<td>0.039%</td>
<td>5.0E-04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.2E-03</td>
<td>1.3E-04</td>
<td></td>
<td></td>
<td></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>
<td>1.3E-04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloroethane</td>
<td>75-00-3</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0021%</td>
<td>0.004%</td>
<td>2.2E-06</td>
<td></td>
<td></td>
<td></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>
<td>1.5E-04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.5E-04</td>
<td>4.1E-05</td>
<td></td>
<td></td>
<td></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>
<td>1.1E-03</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>3.0E-04</td>
<td></td>
<td></td>
<td></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>
<td>2.9E-03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.1E-03</td>
<td>7.6E-04</td>
<td></td>
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<td></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>0.069%</td>
<td>9.0E-04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.1E-02</td>
<td>2.4E-04</td>
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</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>
<td>1.5E-03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>3.0E-03</td>
<td>4.1E-04</td>
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<td></td>
</tr>
<tr>
<td>Isocyanate</td>
<td>540-84-1</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0018%</td>
<td>0.00031%</td>
<td>1.8E-05</td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>9.3E-06</td>
<td>4.9E-06</td>
<td></td>
<td></td>
<td></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>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.1E-06</td>
<td>0</td>
<td></td>
<td></td>
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</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>
<td>0</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
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<td></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>
<td>7.5E-05</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.6E-04</td>
<td>2.0E-05</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Tetrachloroethylene</td>
<td>127-18-4</td>
<td>non-HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.21%</td>
<td>0.062%</td>
<td>2.2E-03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.9E-03</td>
<td>5.7E-04</td>
<td></td>
<td></td>
<td></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>
<td>2.2E-03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.9E-03</td>
<td>5.7E-04</td>
<td></td>
<td></td>
<td></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>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trichloroethylene</td>
<td>79-01-6</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trichlorofluoromethane</td>
<td>75-69-4</td>
<td>VOC/HAP</td>
<td>---</td>
<td>TOC</td>
<td>0.0013%</td>
<td>0</td>
<td>1.3E-05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>3.5E-06</td>
<td></td>
<td></td>
<td></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>
<td>4.2E-03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>6.0E-03</td>
<td>1.6E-03</td>
<td></td>
<td></td>
<td></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>
<td>8.2E-04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.7E-03</td>
<td>2.2E-04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total volatile organic HAPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.30%</td>
<td>1.40%</td>
<td>0.075</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Methodology**

Limited 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.2: Limited Emissions Summary

Material Storage Piles

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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>0.80</td>
<td>0.439</td>
<td>0.154</td>
</tr>
<tr>
<td>Limestone</td>
<td>1.6</td>
<td>1.85</td>
<td>1.30</td>
<td>0.439</td>
<td>0.154</td>
</tr>
<tr>
<td>RAP</td>
<td>0.5</td>
<td>0.58</td>
<td>1.40</td>
<td>0.148</td>
<td>0.052</td>
</tr>
<tr>
<td>Gravel</td>
<td>1.6</td>
<td>1.85</td>
<td>1.20</td>
<td>0.406</td>
<td>0.142</td>
</tr>
<tr>
<td>Slag</td>
<td>3.8</td>
<td>4.40</td>
<td>1.00</td>
<td>0.803</td>
<td>0.281</td>
</tr>
</tbody>
</table>

**Maximum anticipated pile size (acres) provided by the source.

Methodology

\[
PTE\ of\ PM = (Emission\ Factor\ (lb/acre/day)) \times (Maximum\ Pile\ Size\ (acres)) \times (ton/2000\ lbs) \times (8760\ hours/yr)
\]

\[
PTE\ of\ PM10/PM2.5 = \text{Potential PM Emissions (tons/yr)} \times 35%
\]

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**Maximum anticipated pile size (acres) provided by the source.

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PM2.5 = PM10
PTE = Potential to Emit
Appendix A.2: Limited Emissions Summary

Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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.

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

where:
- \( Ef \) = Emission factor (lb/ton)
- \( k' \) = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
- \( k' \) = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
- \( k' \) = 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)

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

Annual Asphalt Production Limitation = 493,160 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 468,592 tons/yr

<table>
<thead>
<tr>
<th>Operation</th>
<th>Limited PTE of PM (tons/yr)</th>
<th>Limited PTE of PM10 (tons/yr)</th>
<th>Limited PTE of PM2.5 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck unloading of materials into storage piles</td>
<td>0.53</td>
<td>0.25</td>
<td>0.04</td>
</tr>
<tr>
<td>Front-end loader dumping of materials into feeder bins</td>
<td>0.53</td>
<td>0.25</td>
<td>0.04</td>
</tr>
<tr>
<td>Conveyor dropping material into dryer/mixer or batch tower</td>
<td>0.53</td>
<td>0.25</td>
<td>0.04</td>
</tr>
<tr>
<td>Total (tons/yr)</td>
<td>1.59</td>
<td>0.75</td>
<td>0.11</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 %)]

Limited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

"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 PTE of PM (tons/yr)</th>
<th>Limited PTE of PM10/PMP2.5 (tons/yr)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>1.26</td>
<td>0.56</td>
</tr>
<tr>
<td>Screening</td>
<td>0.025</td>
<td>0.0087</td>
<td>5.98</td>
<td>2.04</td>
</tr>
<tr>
<td>Conveying</td>
<td>0.003</td>
<td>0.0011</td>
<td>0.70</td>
<td>0.26</td>
</tr>
<tr>
<td>Limited Potential to Emit (tons/yr)</td>
<td>7.82</td>
<td>2.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Methodology

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

Limited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

**Assumes PM10 = PM2.5

Abbreviations
- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (<2.5 um)
- PTE = Potential to Emit
Unpaved Roads at Industrial Site

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

Annual Asphalt Production Limitation = 493,160 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 468,502 tons/yr
No. 2 Fuel Oil Limitation = 2,726,161 gallons/yr

Maximum Asphalt Cement/Binder Throughput = 

Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]

Average Miles Per Trip = (Maximum trips per year (trip/yr)) * (Maximum one-way distance (mi/trip))

Total Weight driven per year (ton/yr) = (Maximum Weight of Vehicle and Load (tons/trip))  * (Maximum trips per year (trip/yr))

Maximum Weight of Vehicle and Load (tons/trip) = (Maximum Weight of Vehicle (tons/trip)) + (Maximum Weight of Load (tons/trip))

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

Maximum Weight of Vehicle and Load (tons/yr) = (Maximum one-way miles (miles/yr)) * (Maximum Weight of Vehicle and Load (tons/yr))

Maximum one-way miles (miles/yr) = (Maximum trips per year (trip/yr)) * (Maximum one-way distance (mi/trip))

Maximum one-way distance (mi/trip) = (Maximum one-way distance (feet/trip)) / (5280 ft/mile)

Maximum Weight of Vehicle (tons/trip) = (Maximum Material Handling Throughput (tons/yr)) / (Maximum trips per year (trip/yr))

Maximum Weight of Load (tons/trip) = (Maximum Material Handling Throughput (tons/yr)) / (Maximum trips per year (trip/yr))

Average Vehicle Weight Per Trip (ton/trip) = (Maximum Weight of Vehicle and Load (tons/trip)) / (Maximum trips per year (trip/yr))

Total Weight driven per year (ton/yr) = (Average Vehicle Weight Per Trip (ton/trip)) * (Average Miles Per Trip (mile/trip))

Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Mitigated Emission Factor,  E = E * [(365 - P)/365]

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

Average Vehicle Weight Per Trip = (Maximum Weight of Vehicle and Load (tons/trip)) / (Maximum trips per year (trip/yr))

Average Miles Per Trip = (Maximum trips per year (trip/yr)) * (Average Vehicle Weight Per Trip (ton/trip)) / (Maximum Weight of Load (tons/trip))

Maximum one-way distance (feet/trip) = (Average Vehicle Weight Per Trip (ton/trip)) * (Average Miles Per Trip (mile/trip)) / (Maximum Weight of Load (tons/trip))

Maximum Weight of Vehicle and Load (tons/yr) = (Average Vehicle Weight Per Trip (ton/trip)) * (Average Miles Per Trip (mile/trip)) / (Maximum Weight of Load (tons/trip))

Maximum one-way miles (miles/yr) = (Maximum trips per year (trip/yr)) * (Maximum one-way distance (mi/trip))

Average Vehicle Weight Per Trip (ton/trip) = (Maximum Weight of Vehicle and Load (tons/trip)) / (Maximum trips per year (trip/yr))

Average Miles Per Trip (mile/trip) = (Maximum trips per year (trip/yr)) / (Maximum one-way distance (mi/trip))

Maximum one-way distance (feet/trip) = (Maximum Weight of Vehicle and Load (tons/trip)) / (Maximum trips per year (trip/yr))

Maximum one-way miles (miles/yr) = (Maximum Weight of Vehicle and Load (tons/trip)) / (Maximum trips per year (trip/yr))

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

Maximum Weight of Vehicle and Load (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) / (Maximum trips per year (trip/yr))
# Limited Emissions Summary

## Paved Roads

**Company Name:** Calcar Quarry  
**Source Address:** 860 East US Highway 150, Paoli, Indiana 47454  
**Reviewer:** Dylan Finley

### 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 + asphalt) / 8,760 hours
- **Mitigated Emission Factor** = (Unmitigated Emission Factor) * (1 - Dust Control Efficiency)
- **Unmitigated Emission Factor** = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
- **Average Vehicle Weight Per Trip** = SUM[Maximum Weight Driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
- **Average Miles Per Trip** = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]

### Abbreviations

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

---

### Table: Limited Emissions Summary

<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>Mitigated PTE of PM (tons/yr)</th>
<th>Mitigated PTE of PM10 (tons/yr)</th>
<th>Mitigated PTE of PM2.5 (tons/yr)</th>
<th>Controlled PTE of PM (ton/yr)</th>
<th>Controlled PTE of PM10 (ton/yr)</th>
<th>Controlled PTE of PM2.5 (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate/RAP Truck Empty Full</td>
<td>Siltex Truck (16 CY)</td>
<td>12.0</td>
<td>25.0</td>
<td>0.19</td>
<td>0.21</td>
<td>0.059</td>
<td>0.08</td>
<td>0.15</td>
<td>0.19</td>
</tr>
<tr>
<td>Aggregate/RAP Truck Empty Full</td>
<td>Siltex Truck (16 CY)</td>
<td>12.0</td>
<td>25.0</td>
<td>0.19</td>
<td>0.21</td>
<td>0.059</td>
<td>0.08</td>
<td>0.15</td>
<td>0.19</td>
</tr>
<tr>
<td>Aggregate/RAP Truck Empty Full</td>
<td>Siltex Truck (16 CY)</td>
<td>12.0</td>
<td>25.0</td>
<td>0.19</td>
<td>0.21</td>
<td>0.059</td>
<td>0.08</td>
<td>0.15</td>
<td>0.19</td>
</tr>
<tr>
<td>Aggregate/RAP Truck Empty Full</td>
<td>Siltex Truck (16 CY)</td>
<td>12.0</td>
<td>25.0</td>
<td>0.19</td>
<td>0.21</td>
<td>0.059</td>
<td>0.08</td>
<td>0.15</td>
<td>0.19</td>
</tr>
<tr>
<td>Aggregate/RAP Truck Empty Full</td>
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<td>12.0</td>
<td>25.0</td>
<td>0.19</td>
<td>0.21</td>
<td>0.059</td>
<td>0.08</td>
<td>0.15</td>
<td>0.19</td>
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<td>12.0</td>
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<td>0.19</td>
<td>0.21</td>
<td>0.059</td>
<td>0.08</td>
<td>0.15</td>
<td>0.19</td>
</tr>
<tr>
<td>Aggregate/RAP Truck Empty Full</td>
<td>Siltex Truck (16 CY)</td>
<td>12.0</td>
<td>25.0</td>
<td>0.19</td>
<td>0.21</td>
<td>0.059</td>
<td>0.08</td>
<td>0.15</td>
<td>0.19</td>
</tr>
</tbody>
</table>
Appendix A.2: Limited Emissions Summary

Cold Mix Asphalt Production and Stockpiles

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

Cold Mix Asphalt Production and Stockpiles

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

Cold Mix Asphalt VOC Usage Limitation = 0.0 tons/yr

<table>
<thead>
<tr>
<th>Volatile Organic Compounds</th>
<th>Maximum weight % of VOC solvent in binder</th>
<th>Weight % VOC solvent that evaporates</th>
<th>VOC Solvent Usage Limitation (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>96.0%</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Cut back asphalt medium cure (assuming kerosene solvent)</td>
<td>28.6%</td>
<td>70.0%</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Cut back asphalt slow cure (assuming fuel oil solvent)</td>
<td>20.0%</td>
<td>25.0%</td>
<td>0.0</td>
<td>0.0</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>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other asphalt with solvent binder</td>
<td>25.9%</td>
<td>2.5%</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Worst Case Limited PTE of VOC = 0.0 tons/yr

Hazardous Air Pollutants

<table>
<thead>
<tr>
<th>Volatile Organic HAP</th>
<th>CAS#</th>
<th>Diesel (#2)</th>
<th>Kerosene</th>
<th>Fuel Oil</th>
<th>No. 2 Fuel Oil</th>
<th>No. 6 Fuel Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3-Butadiene</td>
<td>108-88-0</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>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>83-32-9</td>
<td>4.70E-5%</td>
<td>1.80E-4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>208-98-8</td>
<td>4.50E-5%</td>
<td>8.00E-5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthracene</td>
<td>120-12-7</td>
<td>1.20E-6%</td>
<td>5.80E-5%</td>
<td>2.80E-5%</td>
<td>0.00</td>
<td></td>
</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>Benz(a)anthracene</td>
<td>98-55-3</td>
<td>9.60E-7%</td>
<td>4.50E-7%</td>
<td>5.50E-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>4.40E-5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzo(g,h)perylene</td>
<td>191-24-2</td>
<td>1.02E-7%</td>
<td>5.70E-8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biphenyl</td>
<td>92-52-4</td>
<td>6.30E-4%</td>
<td>7.20E-5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chrylene</td>
<td>218-01-9</td>
<td>4.50E-7%</td>
<td>1.40E-6%</td>
<td>6.90E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>1.70%</td>
<td></td>
<td>3.40E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoranthene</td>
<td>206-44-0</td>
<td>7.10E-6%</td>
<td>5.90E-5%</td>
<td>1.00E-5%</td>
<td>2.40E-4%</td>
<td></td>
</tr>
<tr>
<td>Fluorene</td>
<td>96-73-7</td>
<td>4.20E-5%</td>
<td>8.60E-4%</td>
<td>1.90E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indeno(1,2,3-cd)pyrene</td>
<td>193-38-5</td>
<td>1.60E-7%</td>
<td></td>
<td>1.00E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl-tert-cumyl ether</td>
<td>1634-04-4</td>
<td>0.33%</td>
<td></td>
<td>3.30E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-07-3</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-Hexane</td>
<td>110-84-3</td>
<td>2.40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-01-8</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>128-38-0</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>0.18%</td>
<td>8.20E-4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Xylenes</td>
<td>1330-2-7</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% 0.33% 1.29% 0.88% 0.19%

Worst Single HAP

| Xylenes | 9.00% |
| Naphthalene, Xylenes | 0.31% |
| Xylenes | 0.50% |
| Xylenes | 0.23% |
| Chrylene | 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 Limited PTE of VOC (tons/yr)] * [Worst Case Total HAP Content of VOC solvent (weight %)]
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: Calcar Quarry  
Source Address: 860 East US Highway 150, Paoli, Indiana 47454  
Renewal: 117-43007-03220  
Reviewer: Dylan Finley

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.

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

Gasoline Throughput = 20 gallons/day

\[ \text{Gasoline Throughput (kgal/yr)} = \frac{20 \text{ gallons/day}}{365 \text{ days/yr}} \times 1000 \text{ gal/kgal} = 7.3 \text{ kgal/yr} \]

<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>0.001</td>
</tr>
<tr>
<td>Tank breathing and emptying</td>
<td>1.0</td>
<td>0.004</td>
</tr>
<tr>
<td>Vehicle refueling (displaced losses - controlled)</td>
<td>1.1</td>
<td>0.004</td>
</tr>
<tr>
<td>Spillage</td>
<td>0.7</td>
<td>0.003</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>0.01</strong></td>
</tr>
</tbody>
</table>

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* = 26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* = 0.0%  
Xylenes

Limited PTE of Total HAPs (tons/yr) = 0.003
Limited PTE of Single HAP (tons/yr) = 0.001  
Xylenes

Methodology

The gasoline throughput was provided by the source.  
Gasoline Throughput (kgal/yr) = […]  
PTE of VOC (tons/yr) = […]  
PTE of Total HAPs (tons/yr) = […]  
PTE of Single HAP (tons/yr) = […]


Abbreviations

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

#### Drilling and Blasting

**Company Name:** Calcar Quarry  
**Source Address:** 860 East US Highway 150, Paoli, Indiana 47454  
**Renewal:** 117-43007-03220  
**Reviewer:** Dylan Finley

#### Drilling and Blasting Info

<table>
<thead>
<tr>
<th>Process</th>
<th>Blasting rate</th>
<th>Holes drilled per year</th>
<th>Area Shifted per Blast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blasting rate</td>
<td>18.00</td>
<td>488</td>
<td>1,713.3 square foot/blast - average</td>
</tr>
<tr>
<td>Holes per blast</td>
<td>27.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Methodology**

\[
\text{Holes drilled per year (holes/year)} = \text{Blasting rate (blasts/year)} \times \text{Holes per blast (holes/blast)}
\]

#### Drilling and Blasting

**Blasting PM Emission Factor**

\[
\text{PM Ef} = 0.000014(A)^{1.5}
\]

where PM Ef = PM emission factor (lb/blast)

A = horizontal area (ft²), with blasting depth less than or equal to 70 ft

PM Ef = 0.99 lb/blast

**PM10 Scaling Factor** = 0.52

**PM2.5 Scaling Factor** = 0.03

**Process PM**

<table>
<thead>
<tr>
<th>Process</th>
<th>PM (lb/hole)</th>
<th>PM10 (lb/hole)</th>
<th>PM2.5 (lb/hole)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling</td>
<td>1.3</td>
<td>0.676</td>
<td>0.039</td>
</tr>
<tr>
<td>Blasting</td>
<td>0.99</td>
<td>0.516</td>
<td>0.030</td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Units</th>
<th>PM (lb/hole)</th>
<th>PM10 (lb/hole)</th>
<th>PM2.5 (lb/hole)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lb/hole</td>
<td>0.32</td>
<td>0.16</td>
<td>0.01</td>
</tr>
<tr>
<td>lb/blast</td>
<td>0.009</td>
<td>0.005</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Methodology**

*Drilling scaling factors for PM10 and PM2.5 assumed equal to those for blasting.  
Drilling Emission factor from AP-42 Table 11.9-4 for drilling.  
Blasting Emission factor from AP-42 Table 11.9-1 for blasting.  
Blasting Uncontrolled PTE (tons/year) = [Emission Factor (lbs/ton)] * [Holes drilled per year (holes/year)] * [ton/2000 lbs]  
Drilling Uncontrolled PTE (tons/year) = [Emission Factor (lbs/hole)] * [Holes drilled per year (holes/year)] * [ton/2000 lbs]

#### Explosives

<table>
<thead>
<tr>
<th>Explosive Type</th>
<th>Composition</th>
<th>Usage (tons/year)</th>
<th>Usage (lbs/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANFO</td>
<td>Nitroglycerine, Sodium Nitrate, Wood Pulp, Calcium Carbonate</td>
<td>70</td>
<td>16.00</td>
</tr>
<tr>
<td>Dynamite, Straight</td>
<td>Ammonium Nitrate, Fuel Oil</td>
<td>0</td>
<td>0.07</td>
</tr>
</tbody>
</table>

**Emission Factors**

<table>
<thead>
<tr>
<th>Explosive Type</th>
<th>CO</th>
<th>NOx</th>
<th>SO2</th>
<th>CO</th>
<th>NOx</th>
<th>SO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANFO</td>
<td>67</td>
<td>17</td>
<td>2</td>
<td>2.35</td>
<td>0.60</td>
<td>0.07</td>
</tr>
<tr>
<td>Dynamite, Straight</td>
<td>281</td>
<td>0</td>
<td>0</td>
<td>0.04</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**TOTAL**

<table>
<thead>
<tr>
<th>CO</th>
<th>NOx</th>
<th>SO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.39</td>
<td>0.60</td>
<td>0.07</td>
</tr>
</tbody>
</table>

**Methodology**

Explosives emission factors from AP-42 Chapter 13.3, Table 13.3-1.  
Usage (tons/year) = [Usage (lbs/hour)] * [8760 hours/year] * [ton/2000 lbs]  
Uncontrolled PTE (tons/year) = [Emission Factors (lbs/ton)] * [Usage (tons/year)] * [ton/2000 lbs]
Appendix A.2: Limited Emissions Summary
Crushed Stone Plant Material Storage Piles
Fugitive Emissions

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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 #24</td>
<td>2.6</td>
<td>3.01</td>
<td>0.09</td>
<td>0.049</td>
<td>0.017</td>
</tr>
<tr>
<td>Limestone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#73</td>
<td>1.6</td>
<td>1.85</td>
<td>0.14</td>
<td>0.047</td>
<td>0.017</td>
</tr>
<tr>
<td>#Fill</td>
<td>1.6</td>
<td>1.85</td>
<td>0.14</td>
<td>0.047</td>
<td>0.017</td>
</tr>
<tr>
<td>#53</td>
<td>1.6</td>
<td>1.85</td>
<td>0.15</td>
<td>0.051</td>
<td>0.018</td>
</tr>
<tr>
<td>#11f</td>
<td>1.6</td>
<td>1.85</td>
<td>0.05</td>
<td>0.017</td>
<td>0.006</td>
</tr>
<tr>
<td>#11c</td>
<td>1.6</td>
<td>1.85</td>
<td>0.01</td>
<td>0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>#11b-borrow</td>
<td>1.6</td>
<td>1.85</td>
<td>0.05</td>
<td>0.017</td>
<td>0.006</td>
</tr>
<tr>
<td>#8</td>
<td>1.6</td>
<td>1.85</td>
<td>0.23</td>
<td>0.078</td>
<td>0.027</td>
</tr>
<tr>
<td>#2 Stone</td>
<td>1.6</td>
<td>1.85</td>
<td>0.15</td>
<td>0.051</td>
<td>0.018</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>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** 0.36 0.13 (Fugitive)

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

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PM2.5 = PM10
PTE = Potential to Emit
Appendix A.2: Limited Emissions Summary
Crushed Stone Plant Material Processing, Handling, Crushing, Screening, and Conveying

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43307-03220
Reviewer: Dylan Finley

Dropping of Crushed Material into Storage Piles and Trucks (Fugitive)

To estimate potential fugitive emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling And Storage Piles, Section 13.2.4 (Fifth Edition, 11/06) are utilized.

\[
Ef = k'(0.0032)[U/5]^{1.3} / (M/2)^{1.4}
\]

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

\[
\begin{align*}
Ef (PM) &= 2.27E-03 \\
Ef (PM10) &= 1.07E-03 \\
Ef (PM2.5) &= 1.62E-04 \\
\end{align*}
\]

Annual Crushed Stone Limitation = 1,000,000 tons/yr

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Limited PTE of PM (tons/yr)</th>
<th>Limited PTE of PM10 (tons/yr)</th>
<th>Limited PTE of PM2.5 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck unloading of materials into storage piles</td>
<td>1.13</td>
<td>0.54</td>
<td>0.08</td>
</tr>
<tr>
<td>Loading of materials into truck</td>
<td>1.13</td>
<td>0.54</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>Total Fugitive Emissions (tons/yr)</strong></td>
<td><strong>2.27</strong></td>
<td><strong>1.07</strong></td>
<td><strong>0.16</strong> (Fugitive)</td>
</tr>
</tbody>
</table>

**Methodology**

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

Raw materials may include limestone, sand, recycled asphalt pavement (RAP), concrete, gravel, slag, and other additives

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

Material Crushing, Screening, and Conveying (Non-Fugitive)

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>Operation</th>
<th>Uncontrolled Emission Factor for PM (lbs/ton)**</th>
<th>Uncontrolled Emission Factor for PM10 (lbs/ton)**</th>
<th>Limited PTE of PM (tons/yr)</th>
<th>Limited PTE of PM10 (tons/yr)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaw Crusher ID#1CR</td>
<td>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>1.30</td>
<td>1.30</td>
</tr>
<tr>
<td>Standard Crusher ID#2CR</td>
<td>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>2.70</td>
<td>2.70</td>
</tr>
<tr>
<td>Standard Crusher ID#3CR</td>
<td>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>2.70</td>
<td>2.70</td>
</tr>
<tr>
<td>Short Head Crusher ID#4CR</td>
<td>Crushing</td>
<td>0.0054</td>
<td>0.0024</td>
<td>2.70</td>
<td>2.70</td>
</tr>
<tr>
<td>Secco Screen ID#1SC</td>
<td>Screening</td>
<td>0.025</td>
<td>0.0087</td>
<td>12.50</td>
<td>4.35</td>
</tr>
<tr>
<td>Secco Screen ID#2SC</td>
<td>Screening</td>
<td>0.025</td>
<td>0.0087</td>
<td>12.50</td>
<td>4.35</td>
</tr>
<tr>
<td>21 Belt Conveyors, ID#1-16BC, #18BC, #20BC, #23BC and #24BC</td>
<td>Conveying</td>
<td>0.003</td>
<td>0.0011</td>
<td>1.50</td>
<td>0.55</td>
</tr>
<tr>
<td>Radial Stacker ID#1TRS</td>
<td>Conveying</td>
<td>0.003</td>
<td>0.0011</td>
<td>1.50</td>
<td>0.55</td>
</tr>
<tr>
<td>Radial Stacker ID#2TRS</td>
<td>Conveying</td>
<td>0.003</td>
<td>0.0011</td>
<td>1.50</td>
<td>0.55</td>
</tr>
<tr>
<td><strong>Limited Potential to Emit (tons/yr)</strong></td>
<td><strong>41.80</strong></td>
<td><strong>15.70</strong> (Non-Fugitive)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Methodology**

Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/hr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

**Assumes PM10 = PM2.5

**Abbreviations**

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate matter (< 2.5 um)
PTE = Potential to Emit
Appendix A.2: Limited Emissions Summary
Fugitive Dust Emissions - Unpaved Roads
Crushed Stone Plant

Company Name: Calcar Quarry
Source Address: 860 East US Highway 150, Paoli, Indiana 47454
Renewal: 117-43007-03220
Reviewer: Dylan Finley

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).

Vehicle Information (provided by source)

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum number of vehicles</th>
<th>Maximum one-way trips per day per vehicle</th>
<th>Maximum trips per day (trip/day)</th>
<th>Maximum Weight Loaded (tons/trip)</th>
<th>Total Weight driven per day (ton/day)</th>
<th>Maximum one-way distance (feet/trip)</th>
<th>Maximum one-way distance (mi/trip)</th>
<th>Maximum one-way miles (mi/day)</th>
<th>Maximum one-way miles (mi/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter plant (1-way trip) Tri-axle truck</td>
<td>1.6</td>
<td>5.0</td>
<td>10.0</td>
<td>73.0</td>
<td>730.0</td>
<td>400</td>
<td>0.076</td>
<td>1.8</td>
<td>663.6</td>
</tr>
<tr>
<td>Leaving plant (1-way trip) Tri-axle truck</td>
<td>1.6</td>
<td>5.0</td>
<td>10.0</td>
<td>73.0</td>
<td>730.0</td>
<td>400</td>
<td>0.076</td>
<td>1.8</td>
<td>663.6</td>
</tr>
<tr>
<td>Enter plant (1-way trip) Quad-axle truck</td>
<td>0.74</td>
<td>0.19</td>
<td>0.02</td>
<td>0.48</td>
<td>0.12</td>
<td>0.01</td>
<td>0.24</td>
<td>0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>Leaving plant (1-way trip) Quad-axle truck</td>
<td>0.74</td>
<td>0.19</td>
<td>0.02</td>
<td>0.48</td>
<td>0.12</td>
<td>0.01</td>
<td>0.24</td>
<td>0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>Enter plant (1-way trip) Tractor Trailer</td>
<td>0.74</td>
<td>0.19</td>
<td>0.02</td>
<td>0.48</td>
<td>0.12</td>
<td>0.01</td>
<td>0.24</td>
<td>0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>Leaving plant (1-way trip) Tractor Trailer</td>
<td>0.74</td>
<td>0.19</td>
<td>0.02</td>
<td>0.48</td>
<td>0.12</td>
<td>0.01</td>
<td>0.24</td>
<td>0.06</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Total: 78.0

Average Vehicle Weight Per Trip: 69.9 tons/trip
Average Miles Per Trip: 0.08 miles/trip

Unmitigated Emission Factor, \( E_f = k(\frac{s}{12})^a(\frac{W}{3})^b \) (Equation 1a from AP-42 13.2.2)

\[
PM \quad PM_{10} \quad PM_{2.5} \\
\begin{align*}
&k = 4.9 \\
&s = 4.8 \\
&a = 0.7 \\
&W = 69.9 \\
&b = 0.45
\end{align*}
\]

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

\[
PM \quad PM_{10} \quad PM_{2.5} \\
\begin{align*}
&k = 10.64 \\
&s = 2.71 \\
&a = 0.27 \\
&b = 0.45
\end{align*}
\]

Dust Control Efficiency = 50% (pursuant to control measures outlined in fugitive dust control plan)

<table>
<thead>
<tr>
<th>Process</th>
<th>Unmitigated PTE of PM (tons/yr)</th>
<th>Mitigated PTE of PM10 (tons/yr)</th>
<th>Controlled PTE of PM (tons/yr)</th>
<th>Unmitigated PTE of PM2.5 (tons/yr)</th>
<th>Mitigated PTE of PM2.5 (tons/yr)</th>
<th>Controlled PTE of PM2.5 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tri-axles entering plant (one-way trip)</td>
<td>3.52</td>
<td>0.90</td>
<td>0.09</td>
<td>2.32</td>
<td>0.59</td>
<td>0.06</td>
</tr>
<tr>
<td>Tri-axles leaving plant (one-way trip)</td>
<td>3.52</td>
<td>0.90</td>
<td>0.09</td>
<td>2.32</td>
<td>0.59</td>
<td>0.06</td>
</tr>
<tr>
<td>Quad-axles entering plant (one-way trip)</td>
<td>1.47</td>
<td>0.37</td>
<td>0.04</td>
<td>0.97</td>
<td>0.25</td>
<td>0.02</td>
</tr>
<tr>
<td>Quad-axles leaving plant (one-way trip)</td>
<td>1.47</td>
<td>0.37</td>
<td>0.04</td>
<td>0.97</td>
<td>0.25</td>
<td>0.02</td>
</tr>
<tr>
<td>Tractor trailer entering plant (1-way trip)</td>
<td>0.74</td>
<td>0.19</td>
<td>0.02</td>
<td>0.48</td>
<td>0.12</td>
<td>0.01</td>
</tr>
<tr>
<td>Tractor trailer leaving plant (1-way trip)</td>
<td>0.74</td>
<td>0.19</td>
<td>0.02</td>
<td>0.48</td>
<td>0.12</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Methodology

Total Weight driven per day (ton/day) = \([\text{Maximum Weight Loaded (tons/trip)}] \cdot [\text{Maximum trips per day (trip/day)}]\)

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

Average Weight Per Trip (ton/trip) = \(\text{SUM}[\text{Total Weight driven per day (ton/day)}] / \text{SUM}[\text{Maximum trips per day (trip/day)}]\)

Unmitigated PTE (tons/yr) = \(\text{SUM}[\text{Maximum one-way distance (mi/trip)}] \cdot \text{E}_{un}\) (tons/2000 lbs)

Mitigated PTE (tons/yr) = \(\text{SUM}[\text{Maximum one-way distance (mi/trip)}] \cdot \text{E}_{mit}\) (tons/2000 lbs)

Controlled PTE (tons/yr) = \(\text{Mitigated PTE (tons/yr)} \cdot (1 - \text{Dust Control Efficiency})\)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit
January 5, 2021

Craig Knies
Calcar Quarry
PO Box 91
Jasper, IN 47547-0091

Re: Public Notice
Calcar Quarry
Permit Level: FESOP Renewal
Permit Number: 117-43007-03220

Dear Mr. Knies:

Enclosed is the Notice of 30-Day Period for Public Comment for your draft air permit.

Our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person. The Notice of 30-Day Period for Public Comment has also been sent to the OAQ Permits Branch Interested Parties List and, if applicable, your Consultant/Agent and/or Responsible Official/Authorized Individual.

The preliminary findings, including the draft permit, technical support document, emission calculations, and other supporting documents, are available electronically at:

IDEM’s online searchable database: http://www.in.gov/apps/idem/caats/. Choose Search Option by Permit Number, then enter permit 43007

and

IDEM’s Virtual File Cabinet (VFC): http://www.IN.gov/idem. Enter VFC in the search box, then search for permit documents using a variety of criteria, such as Program area, date range, permit #, Agency Interest Number, or Source ID.

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 Paoli Public Library, 100 West Water Street in Paoli, 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 draft permit 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 Dylan Finley, 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 2-1139 or dial (317) 232-1139.

Sincerely,

Theresa Weaver

Theresa Weaver
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover Letter access via website 8/10/2020
January 5, 2021

To: Paoli 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: Calcar Quarry
Permit Number: 117-43007-03220

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
Notice of Public Comment

January 5, 2021
Calcar Quarry
117-43007-03220

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 Joanne Smiddie-Brush with the Air Permits Administration Section at 1-800-451-6027, ext. 3-0185 or via e-mail at JBRUSH@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 2/28/2020
Mail Code 61-53

<table>
<thead>
<tr>
<th>IDEM Staff</th>
<th>TAWEAVER  1/5/2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcar Quarry 117-43007-03220 (draft)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name and address of Sender</th>
<th>Type of Mail:</th>
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</thead>
<tbody>
<tr>
<td>Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204</td>
<td>CERTIFICATE OF MAILING ONLY</td>
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<table>
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<tr>
<th>Line</th>
<th>Article Number</th>
<th>Name, Address, Street and Post Office Address</th>
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<th>Insured Value</th>
<th>Due Send if COD</th>
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<th>S.D. Fee</th>
<th>S.H. Fee</th>
<th>Rest. Del. Fee</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>1</td>
<td></td>
<td>Craig Knies Calcar Quarry PO Box 91 Jasper IN 475470091 (Source CAATS)</td>
<td></td>
<td></td>
<td></td>
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<td>2</td>
<td></td>
<td>Jason Knies Owner Calcar Quarry PO Box 91 Jasper IN 475470091 (RO CAATS)</td>
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<tr>
<td>3</td>
<td></td>
<td>Orleans Town Council P.O. Box 271 Orleans IN 47452 (Local Official)</td>
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<tr>
<td>4</td>
<td></td>
<td>Orange County Commissioners 205 East Main Street Paoli IN 47454 (Local Official)</td>
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<td>5</td>
<td></td>
<td>Paoli Town Council 110 N. Gospel St. Paoli IN 47454 (Local Official)</td>
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<td>Orange County Health Department 205 E Main Street Paoli IN 47454-1591 (Health Department)</td>
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<tr>
<td>7</td>
<td></td>
<td>John Blair 800 Adams Ave Evansville IN 47713 (Affected Party)</td>
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<tr>
<td>8</td>
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<td>Bryan &amp; Beth Newlin 4472 N SR 37 Orleans IN 47452 (Affected Party)</td>
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<td>9</td>
<td></td>
<td>Emanuel Miller 311 E CR 500 N Orleans IN 47452 (Affected Party)</td>
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<tr>
<td>10</td>
<td></td>
<td>Paoli Public Library 100 W Water St Paoli IN 47454 (Library)</td>
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<tr>
<td>11</td>
<td></td>
<td>Sara Hamidovic VET Environmental Engineering 2335 W. Fountain Dr., Ste. B Bloomington IN 47404 (Consultant)</td>
<td></td>
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<tr>
<td>12</td>
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<td>Krystal Shelter Times-Mail 813 16th St Bedford IN 47421 (Affected Party)</td>
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<tr>
<td>13</td>
<td></td>
<td>Miles Flynn Orange County Publishing Inc. 310 N Court St. Paoli IN 47454 (Affected Party)</td>
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</tbody>
</table>

Total number of pieces Listed by Sender: 15

Total number of Pieces Received at Post Office: 15

Postmaster, Per (Name of Receiving employee): 

The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50,000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations of coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.