



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

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

TO: Interested Parties / Applicant

DATE: December 12, 2012

RE: Corydon Stone & Asphalt Company / 061-32439-05308

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

## Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures  
FNPER-AM.dot12/3/07



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

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

Mr. Stephen A. Walker  
Corydon Stone & Asphalt Company  
PO Box D  
Sellersburg, IN 47172

December 12, 2012

Re: 061-32439-05308  
First Administrative Amendment to  
F061-31157-05308

Dear Mr. Walker:

Corydon Stone & Asphalt Company was issued a Federally Enforceable State Operating Permit (FESOP) Renewal No. F061-31157-05308 on August 10, 2012 for a stationary drum-mix, hot-mix asphalt plant, and cold-mix production operation located at 1100 Quarry Road NW, Corydon, IN 47112. On October 22, 2012, the Office of Air Quality (OAQ) received an application from the source requesting the addition of a storage area for asbestos free shingles.

Pursuant to 326 IAC 2-8-10(a)(10), this change to the permit is considered an administrative amendment because the permit is amended to incorporate a modification that adds an emissions unit of the same type that are already permitted and that will comply with the same applicable requirements and permit terms and conditions as the existing emission unit, except if the modification would result in a potential to emit greater than the thresholds in 326 IAC 2-2 (PSD) or 326 IAC 2-3 (Emission Offset).

The PTE of the modification is as follows:

Process/ Emission Unit	PTE of Proposed Modification (tons/year)									
	PM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e	Total HAPs	Worst Single HAP
Shingle Storage Pile	0.01	0.003	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total PTE of Proposed Modification	0.01	0.003	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0

The entire source will continue to limit PM/PM10 emissions to less than 100 tons per twelve (12) consecutive month period, rendering the requirements of 326 IAC 2-7 (Part 70) not applicable (see Appendix A for the calculations).

There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) or National Emission standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 20 and 40 CFR Part 61, 63) included in this administrative amendment.

### PTE of the Entire Source After Issuance of the FESOP Administrative Amendment

The table below summarizes the potential to emit of the entire source, with updated emissions shown as **bold** values and previous emissions shown as ~~strikethrough~~ values.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of the FESOP Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
<b>Ducted Emissions</b>										
Dryer Fuel Combustion <sup>w</sup>	19.32	15.39	15.39	43.49	83.22	2.41	36.79	52,952.54	5.03	3.91 (HCL)
Dryer/ Mixer (Process)	202.46	82.61	87.98	42.89	40.67	23.66	96.13	24,589.64	7.88	2.29 (formaldehyde)
Dryer/Mixer Slag Processing	0.00	0.00	0.00	55.50	0.00	0.00	0.00	0.00	0.00	0.00
Hot Oil Heater Fuel Combustion/ Process <sup>w</sup>	0.02	0.07	0.07	0.01	0.88	0.05	0.74	1,752.00	0.02	0.016
Diesel-Fired Generator <600HP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diesel Fired Generator >600HP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fugitive Emissions</b>										
Asphalt Load-Out, Silo Filling, On-Site Yard	0.82	0.82	0.82	0.00	0.00	12.67	2.13	0.00	0.21	0.007
Material Storage Piles	<del>2.38</del> <b>2.39</b>	<del>0.83</del> <b>0.84</b>	<del>0.83</del> <b>0.84</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Material Processing and Handling	4.78	2.26	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Material Crushing, Screening, and Conveying	23.46	8.57	8.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved and Paved Roads <sup>w</sup>	15.08	3.84	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cold Mix Asphalt Production	0.00	0.00	0.00	0.00	0.00	62.62	0.00	0.00	16.33	5.64
Gasoline Fuel Transfer and Dispensing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volatile Organic Liquid Storage Vessels	0.00	0.00	0.00	0.00	0.00	negl.	0.00	0.00	negl.	negl.
Total PTE of Entire Source	249.00	99.00	99.00	99.00	84.10	99.00	99.00	54,704.54	24.45	5.64
Title V Major Source Thresholds**	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	250	250	250	250	250	100,000	NA	NA
Emission Offset/ Nonattainment NSR Major Source Thresholds	100	100	100	100	100	100	100	NA	NA	NA
negl. = negligible *Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". **The 100,000 CO <sub>2</sub> e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD. <sup>w</sup> Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel										

Pursuant to the provisions of 326 IAC 2-8-10, the permit is hereby administratively amended as follows with the deleted language as ~~strikeouts~~ and new language **bolded**:

**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:

- ...
- (b) Material conveying, handling, screening, and storage operations consisting of the following:

- (1) Raw material storage piles, including:
  - ...
  - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 4.40 **1.50** acres; and
  - ...

**SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS**

Emissions Unit Description [326 IAC 2-8-4(10)]: HMA Plant, RAP Crusher, HOH

...

(b) Material conveying, handling, screening, and storage operations consisting of the following:

- (1) Raw material storage piles, including:
  - ...
  - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 4.40 **1.50** acres; and
  - ...

**SECTION E.1 NSPS REQUIREMENTS**

Emissions Unit Description [326 IAC 2-8-4(10)]: Hot-Mix Asphalt (HMA) Plant

...

(b) Material conveying, handling, screening, and storage operations consisting of the following:

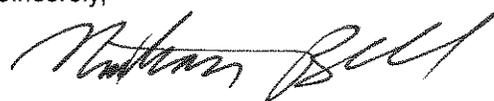
- (1) Raw material storage piles, including:
  - ...
  - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 4.40 **1.50** acres; and
  - ...

All other conditions of the permit shall remain unchanged and in effect. Attached please find the entire revised permit.

A copy of the permit is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Adam Wheat, of my staff, at 317-233-8397 or 1-800-451-6027, and ask for extension 3-8397.

Sincerely,



Nathan Bell, Section Chief  
Permits Branch  
Office of Air Quality  
Attachments: Updated Permit

AW  
cc: File - Harrison County  
Harrison County Health Department  
U.S. EPA, Region V  
Compliance and Enforcement Branch  
Billing, Licensing and Training Section



**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

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

**Federally Enforceable State Operating Permit  
Renewal  
OFFICE OF AIR QUALITY**

**Corydon Stone & Asphalt Co.  
1100 Quarry Rd. NW  
Corydon, Indiana 47122**

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

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

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

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

Operation Permit No.: F061-31157-05308	
Issued by: Original Signed by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: August 10, 2012  Expiration Date: August 10, 2022

First Administrative Amendment No. 061-32439-05308	
Issued by:   Nathan Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: December 12, 2012  Expiration Date: August 10, 2022

## TABLE OF CONTENTS

<b>A. SOURCE SUMMARY</b> .....	<b>5</b>
A.1 General Information [326 IAC 2-8-3(b)]	
A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]	
A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]	
A.4 FESOP Applicability [326 IAC 2-8-2]	
<b>B. GENERAL CONDITIONS</b> .....	<b>8</b>
B.1 Definitions [326 IAC 2-8-1]	
B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]	
B.3 Term of Conditions [326 IAC 2-1.1-9.5]	
B.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]	
B.5 Severability [326 IAC 2-8-4(4)]	
B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]	
B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]	
B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]	
B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]	
B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]	
B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]	
B.12 Emergency Provisions [326 IAC 2-8-12]	
B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]	
B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]	
B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]	
B.16 Permit Renewal [326 IAC 2-8-3(h)]	
B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]	
B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]	
B.19 Source Modification Requirement [326 IAC 2-8-11.1]	
B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2] [IC 13-30-3-1]	
B.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]	
B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16] [326 IAC 2-1.1-7]	
B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]	
<b>C. SOURCE OPERATION CONDITIONS</b> .....	<b>17</b>
<b>Emission Limitations and Standards [326 IAC 2-8-4(1)]</b>	
C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]	
C.2 Overall Source Limit [326 IAC 2-8]	
C.3 Opacity [326 IAC 5-1]	
C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]	
C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]	
C.6 Fugitive Dust Emissions [326 IAC 6-4]	
C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]	
C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]	
<b>Testing Requirements [326 IAC 2-8-4(3)]</b>	
C.9 Performance Testing [326 IAC 3-6]	
<b>Compliance Requirements [326 IAC 2-1.1-11]</b>	
C.10 Compliance Requirements [326 IAC 2-1.1-11]	

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

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

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

- C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
- C.14 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]
- C.15 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]
- C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4]  
[326 IAC 2-8-5]

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

- C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]
- C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

**Stratospheric Ozone Protection**

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

**D.1 EMISSIONS UNIT OPERATION CONDITIONS – HMA Plant, RAP Crusher, HOH ..... 24**

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

- D.1.1 PSD Minor Limit [326 IAC 2-2]
- D.1.2 FESOP Limits: PM10, PM2.5, SO2, NOx, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2]  
[326 IAC 8-1-6]
- D.1.3 FESOP Limits: SO2, NOX, and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]
- D.1.4 Particulate Emission Limits [326 IAC 6-2]
- D.1.5 Particulate Emission Limits [326 IAC 6-3]
- D.1.6 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1] [326 IAC 7-2-1]
- D.1.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

**Compliance Determination Requirements**

- D.1.8 Particulate Control (PM/PM10/PM2.5)
- D.1.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]
- D.1.10 Sulfur Dioxide (SO2) Emissions and Sulfur Content
- D.1.11 Multiple Fuel and Slag Usage
- D.1.12 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content
- D.1.13 Shingle Asbestos Content

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

- D.1.14 Visible Emissions Notations
- D.1.15 Parametric Monitoring
- D.1.16 Broken or Failed Bag Detection

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

- D.1.17 Record Keeping Requirements
- D.1.18 Reporting Requirements

**D.2. EMISSIONS UNIT OPERATION CONDITIONS - Cold-Mix Asphalt Production & Storage ..... 35**

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

- D.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-5-2]
- D.2.2 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

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

- D.2.3 Record Keeping Requirements
- D.2.4 Reporting Requirements

**E.1. NSPS REQUIREMENTS - Hot-Mix Asphalt (HMA) Plant..... 38**

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

- E.1.1 General Provisions Relating to the New Source Performance Standards (NSPS) for Hot-mix Asphalt Facilities (40 CFR 60, Subpart I), [326 IAC 12] [40 CFR Part 60, Subpart A]
- E.1.2 NSPS Subpart I Requirements - Standards of Performance for Hot-mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12-1]
- E.1.3 Testing Requirements [40 CFR Part 60, Subpart I] [326 IAC 12-1] [326 IAC 2-8-5(a)(1),(4)] [326 IAC 2-1.1-11]

**E.2. NSPS REQUIREMENTS - Recycled Asphalt Pavement (RAP) Crusher ..... 40**

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

- E.2.1 General Provisions Relating to the New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO), [326 IAC 12] [40 CFR Part 60, Subpart A]
- E.2.2 New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants [40 CFR Part 60, Subpart OOO] [326 IAC 12-1]
- E.2.3 Testing Requirements [40 CFR Part 60, Subpart OOO] [326 IAC 12-1] [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

Certification Form ..... 42  
Emergency Occurrence Form ..... 43  
FESOP Quarterly Report Forms ..... 45  
Quarterly Deviation and Compliance Monitoring Report Form ..... 49  
Fugitive Particulate Emissions Control Plan ..... Attachment A  
NSPS Subpart I - Performance Standards for Hot-mix Asphalt Facilities ..... Attachment B  
NSPS OOO (30) - Performance Standards for Nonmetallic Mineral Processing Plants ..... Attachment C

## SECTION A

## SOURCE SUMMARY

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

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

---

The Permittee owns and operates a stationary drum-mix hot-mix asphalt plant and cold-mix asphalt production operation. Recycled asphalt pavement (RAP) is crushed on-site, and blast furnace, electric arc furnace steel mill slag, and/or asbestos-free recycled shingles are processed in the aggregate mix. This source does not grind any shingles on-site.

Source Address:	1100 Quarry Rd. NW, Corydon, Indiana 47122
General Source Phone Number:	(812) 376-2436
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
County Location:	Harrison
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

---

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

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as emission unit No. 1, constructed in 2007, with a maximum throughput capacity of 400 tons of raw material per hour, processing recycled asphalt pavement (RAP), blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 100 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, residual oil (No. 5 or No. 6 fuel oil), and waste oil, as available, equipped with a baghouse, identified as CD-1, for particulate control, and exhausting through stack S-1. This plant is also used to produce cold mix asphalt. No grinding of shingles occurs at this source.
- (b) Material conveying, handling, screening, and storage operations consisting of the following:
  - (1) Raw material storage piles, including:
    - (A) Sand storage piles, with a maximum anticipated pile size of 0.80 acre;
    - (B) Limestone storage piles, with a maximum anticipated pile size of 1.30 acres;
    - (C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.40 acres;
    - (D) Gravel storage piles, with a maximum anticipated pile size of 1.20 acre; and
    - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 1.50 acres; and

- (F) Blast furnace and/or electric arc furnace steel mill slag storage piles, with a combined maximum anticipated pile size of 1.00 acre.
- (2) One (1) dry additive storage silo, identified as emission unit No. 6, constructed in 2007, with a maximum storage capacity of 38.25 tons, equipped with a baghouse, identified as CD-2, for particulate control, and exhausting through stack CD-2;
- (3) One (1) eight (8) compartment aggregate cold feed system;
- (4) One (1) dual deck scalping screen;
- (5) Two (2) belt conveyors;
- (7) One (1) recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) system, including:
  - (A) Two (2) feed bins for recycled asphalt pavement and recycled shingles.
  - (C) One (1) scalping screen; and
  - (B) Two (2) belt conveyors;
- (8) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos; and
- (9) Three (3) hot-mixed asphalt storage silos, identified as SILO, constructed in 2006, with a maximum storage capacity of 300 tons, each, uncontrolled and exhausting to the atmosphere;

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

- (c) One (1) electrically powered portable crusher for processing reclaimed asphalt pavement (RAP), identified as CRUSHER, constructed in 2007, with a maximum throughput capacity of 150 tons of RAP per hour, uncontrolled and exhausting to the atmosphere.

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

- (d) Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles.

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

---

This stationary source also includes the following insignificant activities:

- (a) One (1) natural gas-fired hot oil heater, identified as emission unit No. 2, constructed in 2007, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), uncontrolled and exhausting to stack S-2; [326 IAC 6-2]
- (b) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) British thermal units per hour and firing fuel containing equal to or less than five-tenths percent (0.5%) sulfur by weight.
- (c) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thousand (230,000) gallons per month;

- (d) Four (4) storage tanks, exhausting at stacks S-3, S-4, S-5, and S-6, including:
  - (1) Two (2) liquid asphalt cement storage tanks, identified as Tank-1a and Tank-1b, constructed in 2004, with a maximum storage capacity of 35,000 and 15,000 gallons, respectively;
  - (2) One (1) No. 4 fuel oil storage tank, identified as Tank-2a, constructed in 2004, with a maximum storage capacity of 20,000 gallons.
  - (3) One (1) No. 2 fuel oil storage tank, identified as Tank-2b, constructed in 2004, with a maximum storage capacity of 1,000 gallons; and
- (e) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;
- (f) Combustion source flame safety purging on startup;
- (g) Miscellaneous VOC and HAP Storage tanks, each with capacities less than or equal to 1,000 gallons, and annual throughputs of less than 12,000 gallons, uncontrolled and exhausting to the atmosphere;
- (h) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (i) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;
- (j) Cleaners and solvents characterized as follows:
  - (1) having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 °C (100 °F) or;
  - (2) having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20 °C (68 °F); the use of which for all cleaners and solvents combined does not exceed one hundred forty-five (145) gallons per twelve (12) months;
- (k) Closed loop heating and cooling systems;
- (l) Baghouse maintenance operations, including replacement or repair of electrostatic precipitators, bags in baghouses, and/or filters in other air filtration equipment;
- (m) Purging of gas lines and/or vessels related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process;
- (n) Process vessel degassing and cleaning to prepare for internal repairs.
- (o) Paved and unpaved roads and parking lots with public access. [326 IAC 6-5]

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, F061-31157-05308, 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, and Southwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or  
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)  
Facsimile Number: 317-233-6865  
Southeast Regional Office phone: (812) 358-2027; fax: (812) 358-2058  
Southwest Regional Office phone: (812) 380-2305; fax: (812) 380-2304.

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or 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 F061-31157-05308 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(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

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

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

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

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

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

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

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

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

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

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

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

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

and

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

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

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

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

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

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

---

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

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

---

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

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

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

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

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:  
  
Indiana Department of Environmental Management  
Permit Administration and Support Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
  
Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

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

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

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

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

## SECTION C

## SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e) 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 demolitions start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

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

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

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

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

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

---

- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:  
  
Indiana Department of Environmental Management  
Compliance and Enforcement Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
  
no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

## **Compliance Requirements [326 IAC 2-1.1-11]**

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

---

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

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

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

---

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 or of initial start-up, whichever is later, 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 or the date of initial startup, whichever is later, 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).

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

### **C.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.
- (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.
- (1) Support information includes the following:
- (A) All calibration and maintenance records.
  - (B) All original strip chart recordings for continuous monitoring instrumentation.
  - (C) Copies of all reports required by the FESOP.
- (2) Records of required monitoring information include the following:
- (A) The date, place, as defined in this permit, and time of sampling or measurements.
  - (B) The dates analyses were performed.
  - (C) The company or entity that performed the analyses.
  - (D) The analytical techniques or methods used.
  - (E) The results of such analyses.
  - (F) 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 [326 IAC 2-8-4(10)]:** HMA Plant, RAP Crusher, HOH

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as emission unit No. 1, constructed in 2007, with a maximum throughput capacity of 400 tons of raw material per hour, processing recycled asphalt pavement (RAP), blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 100 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, residual oil (No. 5 or No. 6 fuel oil) and waste oil, as available, equipped with a baghouse, identified as CD-1, for particulate control, and exhausting through stack S-1. This plant is also used to produce cold mix asphalt. No grinding of shingles occurs at this source.
- (b) Material conveying, handling, screening, and storage operations consisting of the following:
  - (1) Raw material storage piles, including:
    - (A) Sand storage piles, with a maximum anticipated pile size of 0.80 acre;
    - (B) Limestone storage piles, with a maximum anticipated pile size of 1.30 acres;
    - (C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.40 acres;
    - (D) Gravel storage piles, with a maximum anticipated pile size of 1.20 acre; and
    - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 1.50 acres; and
    - (F) Blast furnace and/or electric arc furnace steel mill slag storage piles, with a combined maximum anticipated pile size of 1.00 acre.
  - (2) One (1) dry additive storage silo, identified as emission unit No. 6, constructed in 2007, with a maximum storage capacity of 38.25 tons, equipped with a baghouse, identified as CD-2, for particulate control, and exhausting through stack CD-2;
  - (3) One (1) eight (8) compartment aggregate cold feed system;
  - (4) One (1) dual deck scalping screen;
  - (5) Two (2) belt conveyors;
  - (7) One (1) recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) system, including:
    - (A) Two (2) feed bins for recycled asphalt pavement and recycled shingles.
    - (C) One (1) scalping screen; and
    - (B) Two (2) belt conveyors;
  - (8) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos; and
  - (9) Three (3) hot-mixed asphalt storage silos, identified as SILO, constructed in 2006, with a maximum storage capacity of 300 tons, each, uncontrolled and exhausting to the atmosphere;

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

- (c) One (1) electrically powered portable crusher for processing reclaimed asphalt pavement (RAP), identified as CRUSHER, constructed in 2007, with a maximum throughput capacity of 150 tons of RAP per hour, uncontrolled and exhausting to the atmosphere.

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

**Insignificant Activities: Boilers**

- (a) One (1) natural gas-fired hot oil heater, identified as emission unit No. 2, constructed in 2007, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), uncontrolled and exhausting to stack S-2; [326 IAC 6-2]

(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;

- (a) The amount of asphalt processed shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM emissions from the dryer/mixer shall not exceed 0.274 pounds per ton of asphalt processed.

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

**D.1.2 FESOP Limits: PM10, PM2.5, SO2, NOx, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2][326 IAC 8-1-6]**

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

- (a) The amount of asphalt processed shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM10 emissions from the dryer/mixer shall not exceed 0.112 pounds per ton of asphalt processed.
- (c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.119 pounds of PM2.5 per ton of asphalt produced.
- (d) The SO2 emissions from the dryer/mixer shall not exceed 0.058 pounds per ton of asphalt processed.
- (e) The NOx emissions from the dryer/mixer shall not exceed 0.055 pounds per ton of asphalt processed.
- (f) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

- (g) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, NOx, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, SO2, NOx, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-1.1-5 (Nonattainment New Source Review) not applicable.

Additionally, compliance with the limit in condition D.1.2(f) shall limit the VOC emissions from the dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

D.1.3 FESOP Limits: SO2, NOX, and HAPs [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-2 and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following:

(a) Fuel and Slag Specifications

- (1) The sulfur content of the No. 2 distillate fuel oil combusted in the dryer/mixer and hot oil heater shall not exceed 0.50% by weight.
- (2) The sulfur content of the No. 4 distillate fuel oil combusted in the dryer/mixer and hot oil heater shall not exceed 0.50% by weight.
- (3) The sulfur content of the residual oil (No. 5 or No. 6 fuel oil) shall not exceed 0.50% by weight.
- (4) The sulfur content of the waste oil shall not exceed 1.00% by weight.
- (5) The waste oil shall not contain more than 1.02% ash, 0.20% chlorine, and 0.01% lead, by weight.
- (6) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of waste oil burned.
- (7) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.
- (8) The SO2 emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of blast furnace slag processed in the aggregate mix.
- (9) The sulfur content of the steel slag shall not exceed 0.66% by weight.
- (10) The SO2 emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag processed in the aggregate mix.

(b) Single Fuel and Slag Usage Limitations:

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

- (1) Natural gas usage shall not exceed 876 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) No. 2 fuel oil usage shall not exceed 1,225,204 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

- (3) No. 4 fuel oil usage shall not exceed 1,159,860 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (4) Residual oil (No. 5 or No. 6 fuel oil) usage shall not exceed 1,108,146 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (5) Waste oil usage shall not exceed 591,765 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

Note: The source is only permitted to burn the above-listed fuels.

- (6) The blast furnace slag usage shall not exceed 150,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) Multiple Fuel and Slag Usage Limitation:

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer and the large generator, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer and the large generator shall be limited as follows:

- (1) SO<sub>2</sub> emissions from the dryer/mixer and the large generator, combined, shall not exceed 98.99 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) NO<sub>x</sub> emissions from the dryer/mixer and the large generator, combined, shall not exceed 83.22 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (3) HCl emissions shall not exceed 3.91 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) Asphalt Shingle Usage Limitation

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use certified asbestos-free recycled shingles, post consumer waste and/or factory seconds, as an additive in its aggregate mix.

Compliance with these limits, combined with the potential to emit SO<sub>2</sub>, NO<sub>x</sub>, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO<sub>2</sub> and NO<sub>x</sub> to less than 100 tons per twelve (12) consecutive month period, each, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

D.1.4 Particulate Emission Limits [326 IAC 6-2]

Pursuant to 326 IAC 6-2-4, the particulate emissions from the hot oil heater shall not exceed six tenths (0.6) pounds of particulate matter per MMBtu heat input.

D.1.5 Particulate Emission Limits [326 IAC 6-3]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the electrically powered portable crusher shall not exceed 55.44 pounds per hour when operating at a process weight rate of 150 tons (or 300,000 pounds) per hour.

The pound per hour limitation was calculated with the following equation:

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:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

**D.1.6 Sulfur Dioxide (SO<sub>2</sub>) [326 IAC 7-1.1-1] [326 IAC 7-2-1]**

---

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

- (1) The sulfur dioxide (SO<sub>2</sub>) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per MMBtu when using distillate oil.
- (2) The sulfur dioxide (SO<sub>2</sub>) emissions from the dryer/mixer burner shall not exceed one and six tenths (1.6) pounds per MMBtu heat input when using residual oil.

Note: The No. 2 and No. 4 fuel oils are each considered distillate oils and the residual oils (No. 5 or No. 6 fuel oil) and waste oil are each considered residual oil.

(b) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

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

---

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

**Compliance Determination Requirements**

**D.1.8 Particulate Control (PM/PM<sub>10</sub>/PM<sub>2.5</sub>)**

---

- (a) In order to comply with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
- (b) In order to comply with Condition D.1.5, the wet suppression for particulate control shall be in operation and control emissions from the RAP crushing and screening operation at all times when the RAP crushing and screening is in operation.
- (c) 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 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]**

---

- (a) In order to demonstrate compliance with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the Permittee shall perform PM, PM<sub>10</sub>, and PM<sub>2.5</sub> testing of the dryer/mixer not later than 180 days after the startup of 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. PM<sub>10</sub> and PM<sub>2.5</sub> includes filterable and condensable particulate matter.

- (b) In order to demonstrate compliance with Condition D.1.3(a)(8), when using blast furnace slag, the Permittee shall perform SO<sub>2</sub> testing for the aggregate dryer within one hundred eighty (180) days of initial use of blast furnace slag in the aggregate mix, utilizing methods as approved by the Commissioner. Testing shall only be performed if the company has not previously performed SO<sub>2</sub> testing while using blast furnace slag in the aggregate mix at one of their other Indiana facilities. 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.

#### D.1.10 Sulfur Dioxide (SO<sub>2</sub>) Emissions and Sulfur Content

---

##### **Fuel Oil**

- (a) Compliance with the fuel limitations established in Conditions D.1.3(a)(1), D.1.3(a)(2), D.1.3(a)(3), D.1.3(a)(4), and D.1.6, shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements) and 326 IAC 3-7-4 (Fuel oil sampling; analysis methods), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
  - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
    - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
    - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
  - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

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

##### **Blast Furnace Slag**

- (b) Compliance with the blast furnace slag limitation established in Condition D.1.3(a)(7) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of blast furnace slag delivered; or
  - (2) Analyzing a sample of each blast furnace slag delivery, if no vendor analyses or certifications are available, to determine the sulfur content of the blast furnace slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

**Steel Slag**

- (c) Compliance with the steel slag limitations established in Condition D.1.3(a)(9) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of steel slag delivered;  
or
  - (2) Analyzing a sample of the steel slag delivery if no vendor analyses or certifications are available, at least once per quarter, to determine the sulfur content of the steel slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

**D.1.11 Multiple Fuel and Slag Usage**

In order to comply with the Condition D.1.3(c) when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer and large generator shall be limited as follows:

(a) Sulfur Dioxide (SO<sub>2</sub>) Emission Calculation

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

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in the last 12 months
- F = gallons of No. 4 fuel oil used in the last 12 months
- R = gallons of residual oil (No. 5 or No. 6 fuel oil) used in the last 12 months
- W = gallons of waste oil used in the last 12 months
- B = tons of blast furnace slag used in the last 12 months
- T = tons of steel slag used in the last 12 months
- E<sub>G</sub> = 0.6 lbs/MMCF of natural gas
- E<sub>O</sub> = 71.0 lbs/1000 gallons of No. 2 fuel oil
- E<sub>F</sub> = 75.0 lbs/1000 gallons of Waste oil
- E<sub>R</sub> = 78.5 lbs/1000 gallons of residual oil (No. 5 or No. 6 fuel oil)
- E<sub>W</sub> = 147.0 lbs/1000 gallons of waste oil
- E<sub>B</sub> = 0.74 lbs/ton of Blast Furnace slag used
- E<sub>T</sub> = 0.0014 lbs/ton of Steel slag used

(b) Nitrogen Oxides (NO<sub>x</sub>) Emission Calculation

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

where:

- N = tons of nitrogen oxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in the last 12 months
- F = gallons of No. 4 fuel oil used in the last 12 months
- R = gallons of residual oil (No. 5 or No. 6 fuel oil) used in the last 12 months
- W = gallons of waste oil used in the last 12 months
- E<sub>G</sub> = 190 lbs/million cubic feet of natural gas
- E<sub>O</sub> = 24.0 lbs/1000 gallons of No. 2 fuel oil
- E<sub>F</sub> = 47.0 lbs/1000 gallons of No. 4 fuel oil
- E<sub>R</sub> = 47.0 lbs/1000 gallons of residual oil (No. 5 or No. 6 fuel oil)
- E<sub>W</sub> = 19.0 lbs/1000 gallons of waste oil

(c) Hydrogen Chloride (HCL) Emission Calculation

$$\text{HCL} = \frac{W(E_W)}{2000 \text{ lbs/ton}}$$

where:

- HCL = tons of hydrogen chloride emissions for a 12-month consecutive period
- W = gallons of waste oil used in the last 12 months.
- E<sub>W</sub> = 13.2 lbs/1000 gallons of waste oil.

D.1.12 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content

The Permittee shall demonstrate compliance with the waste oil ash, chlorine, and lead content limits established in Condition D.1.3(a)(5), by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

D.1.13 Shingle Asbestos Content

Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.3(d) shall be determined utilizing one of the following options:

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

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

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

D.1.14 Visible Emissions Notations

- (a) Visible emission notations from the conveyors, crusher, screens, material transfer points, and dryer/mixer stack 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.1.15 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 of the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between three (3.0) and six (6.0) inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

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

#### D.1.16 Broken or Failed Bag Detection

In the event that bag failure has been observed:

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

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

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

#### D.1.17 Record Keeping Requirements

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

- (b) To document the compliance status with Conditions D.1.3 and D.1.6, the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.3 and D.1.6.
- (1) Calendar dates covered in the compliance determination period;
  - (2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) emission rates for each fuel used at the source since the last compliance determination period;
  - (3) Actual waste oil usage, ash, chlorine, and lead content, and equivalent hydrogen chloride (HCL) emission rate for waste oil used at the source since the last compliance determination period;
  - (4) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
  - (5) If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
    - (A) Fuel supplier certifications;
    - (B) The name of the fuel supplier; and
    - (C) A statement from the fuel supplier that certifies the sulfur content of the No. 2 and No. 4 fuel oils, residual oil (No. 5 or No. 6 fuel oil), and waste oil, and the chlorine content of waste oil.
  - (5) Actual blast furnace and steel slag usage, sulfur content and equivalent sulfur dioxide emission rates for all blast furnace and steel slag used at the source since the last compliance determination period;
  - (6) A certification, signed by the owner or operator, that the records of the blast furnace and steel slag supplier certifications represent all of the blast furnace and steel slag used during the period; and
  - (7) If the slag supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
    - (A) Blast furnace and steel slag supplier certifications;
    - (B) The name of the blast furnace and steel slag supplier; and
    - (C) A statement from the blast furnace and steel slag supplier that certifies the sulfur content of the blast furnace and steel slag.
  - (8) A certification, signed by the owner or operator, that the records of the shingle supplier certifications represent all of the shingles used during the period; and
  - (9) If the shingle supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
    - (A) Shingle supplier certifications;
    - (B) The name of the shingle supplier(s); and

- (C) A statement from the shingle supplier(s) that certifies the asbestos content of the shingles from their company.
- (d) To document the compliance status with Condition D.1.14, the Permittee shall maintain records once per day of the visible emission notations. 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).
- (e) To document the compliance status with Condition D.1.15, 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).
- (f) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

#### D.1.18 Reporting Requirements

A quarterly summary of the information to document compliance status with Conditions D.1.1(a), D.1.2(a), and D.1.3, 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 [326 IAC 2-8-4(10)]: Cold-Mix Asphalt Production & Storage

(d) Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles.

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

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

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

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

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

#### D.2.2 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

- (a) Pursuant to 326 IAC 2-8-4, the VOC emissions from the sum of the liquid binders (asphalt emulsions) shall not exceed 62.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) Liquid binders used in the production of cold mix asphalt shall be defined as follows:
  - (1) Cut back asphalt rapid cure, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95.0% by weight of VOC solvent evaporating.
  - (2) Cut back asphalt medium cure, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70.0% by weight of VOC solvent evaporating.
  - (3) Cut back asphalt slow cure, containing a maximum of 20.0% of the liquid binder by weight of VOC solvent and 25.0% by weight of VOC solvent evaporating.
  - (4) Emulsified asphalt with solvent, containing a maximum of 15.0% of liquid binder by weight of VOC solvent and 46.4% by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume.
  - (5) Other asphalt with solvent binder, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating.
- (c) When using only one type of liquid binder (asphalt emulsion) per twelve (12) consecutive month period, the usage of liquid binder shall be limited as follows:
  - (1) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 65.92 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (2) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 89.46 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
  - (3) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 250.49 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
  - (4) The amount of VOC solvent used in emulsified asphalt shall not exceed 134.96 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
  - (5) The amount of VOC solvent used in all other asphalt shall not exceed 2,504.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (d) When using more than one liquid binder (asphalt emulsion) per twelve (12) consecutive month period, VOC emissions shall be limited as follows:
- (1) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows.

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

Type of binder	adjustment factor
cutback asphalt rapid cure	1.053
cutback asphalt medium cure	1.429
cutback asphalt slow cure	4.000
emulsified asphalt	2.155
other asphalt	40.0

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

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

#### **D.2.3 Record Keeping Requirements**

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

- (2) Actual asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;
- (3) Actual VOC solvent content by weight of the asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and
- (4) Actual amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.

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

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

#### D.2.4 Reporting Requirements

---

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

## SECTION E.1

## NSPS REQUIREMENTS

### Emissions Unit Description [326 IAC 2-8-4(10)]: Hot-Mix Asphalt (HMA) Plant

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as emission unit No. 1, constructed in 2007, with a maximum throughput capacity of 400 tons of raw material per hour, processing recycled asphalt pavement (RAP), blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 100 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, and No. 4 fuel oil, as available, equipped with a baghouse, identified as CD-1, for particulate control, and exhausting through stack S-1. This plant is also used to produce cold mix asphalt. No grinding of shingles occurs at this source.
- (b) Material conveying, handling, screening, and storage operations consisting of the following:
  - (1) Raw material storage piles, including:
    - (A) Sand storage piles, with a maximum anticipated pile size of 0.80 acre;
    - (B) Limestone storage piles, with a maximum anticipated pile size of 1.30 acres;
    - (C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.40 acres;
    - (D) Gravel storage piles, with a maximum anticipated pile size of 1.20 acre; and
    - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 1.50 acres; and
    - (F) Blast furnace and/or electric arc furnace steel mill slag storage piles, with a combined maximum anticipated pile size of 1.00 acre.
  - (2) One (1) dry additive storage silo, identified as emission unit No. 6, constructed in 2007, with a maximum storage capacity of 38.25 tons, equipped with a baghouse, identified as CD-2, for particulate control, and exhausting through stack CD-2;
  - (3) One (1) eight (8) compartment aggregate cold feed system;
  - (4) One (1) dual deck scalping screen;
  - (5) Two (2) belt conveyors;
  - (7) One (1) recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) system, including:
    - (A) Two (2) feed bins for recycled asphalt pavement and recycled shingles.
    - (C) One (1) scalping screen; and
    - (B) Two (2) belt conveyors;
  - (8) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos; and
  - (9) Three (3) hot-mixed asphalt storage silos, identified as SILO, constructed in 2006, with a maximum storage capacity of 300 tons, each, uncontrolled and exhausting to the atmosphere;

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

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

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

#### **E.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]**

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

(b) Pursuant to 40 CFR 60.10, 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

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

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

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

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

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

**SECTION E.2**

**NSPS REQUIREMENTS**

**Emissions Unit Description [326 IAC 2-8-4(10)]:** Recycled Asphalt Pavement (RAP) Crusher

- (c) One (1) electrically powered portable crusher for processing reclaimed asphalt pavement (RAP), identified as CRUSHER, constructed in 2007, with a maximum throughput capacity of 150 tons of RAP per hour, uncontrolled and exhausting to the atmosphere.

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

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

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

**E.2.1 General Provisions Relating to the New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO) [326 IAC 12-1] [40 CFR 60, Subpart A]**

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

- (b) Pursuant to 40 CFR 60.10, 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

**E.2.2 New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants [40 CFR 60, Subpart OOO] [326 IAC 12-1]**

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

- |   |  |
|---|--|
| (1) 40 CFR 60.670(a), (d), (e), and (f) | (6) 40 CFR 60.675(a), (c)(1)(i), (ii), (iii), (c)(3), (d), (e), (g), and (i) |
| (2) 40 CFR 60.671                       |  |
| (3) 40 CFR 60.672(b), (d), and (e)      | (7) 40 CFR 60.676(a), (b)(1), (f), (g), (h), (i), (j), and (k)               |
| (4) 40 CFR 60.673                       | (8) Table 1 and Table 3  |
| (5) 40 CFR 60.674(b)                    |  |

**E.2.3 Testing Requirements [40 CFR 60, Subpart OOO] [326 IAC 12-1] [326 IAC 2-8-5(a)(1),(4)] [326 IAC 2-1.1-11]**

In order to demonstrate compliance with Condition E.2.2, the Permittee shall perform testing for fugitive emissions from affected facilities without water sprays, as required under NSPS 40 CFR 60, Subpart OOO, within 60 days of achieving maximum capacity, but not later than 180 days after the startup, utilizing methods approved by the Commissioner. Testing shall only be performed if the company has not previously performed testing for the same crusher and/or grinder at one of their other Indiana facilities. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Section C – Performance Testing

contains the Permittee's obligation with regard to the performance testing required by this condition.

**Note:** Pursuant to §60.674(b)(1), 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.

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

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

Source Name: Corydon Stone & Asphalt Co.  
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122  
FESOP Permit No.: F061-31157-05308

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

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)\_\_\_\_\_
- Report (specify)\_\_\_\_\_
- Notification (specify)\_\_\_\_\_
- Affidavit (specify)\_\_\_\_\_
- Other (specify)\_\_\_\_\_

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

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
Phone: (317) 233-0178  
Fax: (317) 233-6865**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
EMERGENCY OCCURRENCE REPORT**

Source Name: Corydon Stone & Asphalt Co.  
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122  
FESOP Permit No.: F061-31157-05308

**This form consists of 2 pages**

**Page 1 of 2**

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

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

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

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

**Page 2 of 2**

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

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

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

**FESOP Quarterly Report**

Source Name: Corydon Stone & Asphalt Co.  
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122  
FESOP Permit No.: F061-31157-05308  
Facility: Dryer/Mixer  
Parameter: **Hot-mix Asphalt Production**  
Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

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

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

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

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

**FESOP Quarterly Report**

Page 1 of 3

Source Name: Corydon Stone & Asphalt Co.  
 Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122  
 FESOP Permit No.: F061-31157-05308  
 Facility: Dryer/Mixer Burner

Parameter: **Fuel & Slag Usage / SO<sub>2</sub> & NO<sub>x</sub> emissions**

Emission Limits: Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 98.99 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(a).

Nitrogen oxides (NO<sub>x</sub>) emissions shall not exceed 83.22 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(b).

Hydrogen Chloride (HCL) emissions shall not exceed 3.91 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(c).

Fuel & Slag Limits: When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer and the large generator, in conjunction with the use of slag in the aggregate mix, fuel and slag usage shall not exceed the following:

Fuel Type (Units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	876
No. 2 Fuel Oil (gallons)	1,225,204
No. 4 fuel Oil (gallons)	1,159,860
Residual Oil (No. 5 or No. 6 fuel oil) (gallons)	1,108,146
Waste Oil (gallons)	591,765
Blast Furnace Slag (tons)	150,000

Facility: Cold-mix Asphalt Production

Parameter: **Binder Usage / VOC Emissions**

Emission Limits: Volatile Organic Compound (VOC) emissions from the sum of the binders shall not exceed 62.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month, using the equation found in Condition D.2.2(d).

Binder Limits: When using only one type of liquid binder (asphalt emulsion) per twelve (12) consecutive month period in the production of cold-mix asphalt, liquid binder (asphalt emulsion) usage shall not exceed the following:

Type of Binder	Binder Usage Limit (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	65.92
Cutback Asphalt Medium Cure	89.46
Cutback Asphalt Slow Cure	250.49
Emulsified Asphalt	134.96
Other Asphalt	2,504.90

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

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Fuel Types / Slag (units)	Column 1	Column 2	Column 1 + Column 2	Equation Results		
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	Sulfur Dioxide (SO2) Emissions (tons per 12 months)	Nitrogen Oxides (NOx) Emissions (tons per 12 months)	Hydrogen Chloride (HCl) Emissions (tons per 12 months)
Month 1	Natural Gas (million cubic feet)						
	No. 2 Distillate Fuel Oil (gallons)						
	No. 4 Fuel Oil (gallons)						
	Residual Oil (No. 5 or No. 6 fuel oil) (gallons)						
	Waste Oil (gallons)						
	Blast Furnace Slag (tons)						
	Steel Slag Usage (tons)						
Month 2	Natural Gas (million cubic feet)						
	No. 2 Fuel Oil (gallons)						
	No. 4 Fuel Oil (gallons)						
	Residual Oil (No. 5 or No. 6 fuel oil) (gallons)						
	Waste Oil (gallons)						
	Blast Furnace Slag (tons)						
	Steel Slag Usage (tons)						
Month 3	Natural Gas (million cubic feet)						
	No. 2 Fuel Oil (gallons)						
	No. 4 Fuel Oil (gallons)						
	Residual Oil (No. 5 or No. 6 fuel oil) (gallons)						
	Waste Oil (gallons)						
	Blast Furnace Slag (tons)						
	Steel Slag Usage (tons)						

No deviation occurred in this reporting period.

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Deviation/s occurred in this reporting period.

Title / Position: \_\_\_\_\_ Phone: \_\_\_\_\_

Deviation was reported on: \_\_\_\_\_

Signature: \_\_\_\_\_

**FESOP Quarterly Report - Liquid Binder (Asphalt Emulsion) Usage / VOC Emissions**

QUARTER: \_\_\_\_\_ YEAR: \_\_\_\_\_

Month	Binder/Emulsion Types (tons)	Column 1	Column 2	Column 1 + Column 2	Equation Results
		Solvent Usage This Month (tons)	Solvent Usage Previous 11 Months (tons)	Solvent Usage 12 Month Total (tons)	VOC Emissions (tons per 12 months)
Month 1	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 2	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 3	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				

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

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title / Position: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Signature: \_\_\_\_\_

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

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

**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: Corydon Stone & Asphalt Co.  
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122  
FESOP Permit No.: F061-31157-05308

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

Page 1 of 2

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

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

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

**Asphalt Plant Maximum Capacity - Drum Mix**

Maximum Hourly Asphalt Production =	400	ton/hr										
Maximum Annual Asphalt Production =	3,504,000	ton/yr										
Maximum Annual Blast Furnace Slag Usage =	1,471,680	ton/yr	1.50	% sulfur								
Maximum Annual Steel Slag Usage =	1,471,680	ton/yr	0.66	% sulfur								
Maximum Dryer Fuel Input Rate =	100.0	MMBtu/hr										
Natural Gas Usage =	876	MMCF/yr										
No. 2 Fuel Oil Usage =	6,257.143	gal/yr, and	0.50	% sulfur								
No. 4 Fuel Oil Usage =	6,257.143	gal/yr, and	0.50	% sulfur								
Residual (No. 5 or No. 6) Fuel Oil Usage =	6,257.143	gal/yr, and	0.50	% sulfur								
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur								
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur								
Used/Waste Oil Usage =	6,257.143	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% chlorine,	0.010	% lead		
Diesel Fuel Usage - Generator < 600 HP =	0	gal/yr, and										
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0	% sulfur								
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production										
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production										
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production										
Unlimited SO2 Dryer/Mixer Emission Factor =	0.058	lb/ton of asphalt production										
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production										
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production										
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production										
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed										
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed										

**Unlimited/Uncontrolled Emissions**

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO2e	Total HAPs	Worst Case HAP	
<b>Ducted Emissions</b>											
Dryer Fuel Combustion (worst case)	204.23	162.75	162.75	459.90	147.04	3.13	36.79	78,277.93	45.12	41.30 (hexane)	
Dryer/Mixer (Process)	49,056.00	11,388.00	2,628.00	101.62	96.36	56.06	227.76	58,257.50	18.68	5.43 (formaldehyde)	
Dryer/Mixer Slag Processing (worst case)	0	0	0	544.52	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.88	0.05	0.74	1,752.00	0.017	0.016 (hexane)	
Diesel-Fired Generator < 600 HP	0	0	0	0	0	0	0	0	0	0	
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	0	
<b>Worst Case Emissions*</b>	<b>49,056.02</b>	<b>11,388.07</b>	<b>2,628.07</b>	<b>1,004.43</b>	<b>147.92</b>	<b>56.11</b>	<b>228.50</b>	<b>80,029.93</b>	<b>45.14</b>	<b>41.30 (formaldehyde)</b>	
<b>Fugitive Emissions</b>											
Asphalt Load-Out, Silo Filling, On-Site Yard	1.94	1.94	1.94	0	0	30.01	5.05	0	0.50	0.16 (formaldehyde)	
Material Storage Piles	2.39	0.84	0.84	0	0	0	0	0	0	0	
Material Processing and Handling	11.32	5.35	0.81	0	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	55.59	20.31	20.31	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	35.72	9.10	0.91	0	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	42,109.32	0	0	10,983.67	3,789.84 (xylenes)	
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0	
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	0	
<b>Total Fugitive Emissions</b>	<b>106.96</b>	<b>37.54</b>	<b>24.81</b>	<b>0.00</b>	<b>0.00</b>	<b>42,139.33</b>	<b>5.05</b>	<b>0.00</b>	<b>10,984.17</b>	<b>3,789.84 (xylenes)</b>	
<b>Totals Unlimited/Uncontrolled PTE</b>	<b>49,162.98</b>	<b>11,425.61</b>	<b>2,652.87</b>	<b>1,004.43</b>	<b>147.92</b>	<b>42,195.44</b>	<b>233.54</b>	<b>80,029.93</b>	<b>11,029.31</b>	<b>3,789.84 (xylenes)</b>	

negl = negligible

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

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

Fuel component percentages provided by the source.

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

**Maximum Capacity**

Maximum Fuel Input Rate =	100	MMBtu/hr																
Natural Gas Usage =	876	MMCF/yr																
No. 2 Fuel Oil Usage =	6,257,143	gal/yr, and		0.50	% sulfur													
No. 4 Fuel Oil Usage =	6,257,143	gal/yr, and		0.50	% sulfur													
Residual (No. 5 or No. 6) Fuel Oil Usage =	6,257,143	gal/yr, and		0.50	% sulfur													
Propane Usage =	0	gal/yr, and		0	gr/100 ft3 sulfur													
Butane Usage =	0	gal/yr, and		0	gr/100 ft3 sulfur													
Used/Waste Oil Usage =	6,257,143	gal/yr, and		1.00	% sulfur	1.02	% ash	0.200	% chlorine	0.010	% lead							

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)								Unlimited/Uncontrolled Potential to Emit (tons/yr)								Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)			
PM	1.9	2.0	7.0	7.82	0.5	0.6	65.3	0.83	6.26	21.90	24.45	0	0	204.23	<b>204.23</b>		
PM10/PM2.5	7.6	3.3	8.3	9.32	0.5	0.6	52.02	3.33	10.32	25.97	29.14	0	0	162.75	<b>162.75</b>		
SO2	0.6	71.0	75.0	78.5	0	0	147.0	0.26	222.13	234.64	245.59	0	0	459.90	<b>459.90</b>		
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	83.22	75.09	147.04	147.04	0	0	59.44	<b>147.04</b>		
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.41	0.63	0.63	0.88	0	0	3.13	<b>3.13</b>		
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	36.792	15.64	15.64	15.64	0	0	15.64	<b>36.79</b>		
<b>Hazardous Air Pollutant</b>																	
HCl							13.2							41.30	<b>41.30</b>		
Antimony			5.25E-03	5.25E-03			negl			1.64E-02	1.64E-02			negl	<b>1.6E-02</b>		
Arsenic	2.0E-04	5.6E-04	1.39E-03	1.32E-03			1.1E-01	8.8E-05	1.75E-03	4.13E-03	4.13E-03			3.44E-01	<b>3.4E-01</b>		
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	5.9E-06	1.31E-03	8.70E-05	8.70E-05			negl	<b>1.3E-03</b>		
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	4.8E-04	1.31E-03	1.25E-03	1.25E-03			2.91E-02	<b>2.9E-02</b>		
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	6.1E-04	1.31E-03	2.64E-03	2.64E-03			6.26E-02	<b>6.3E-02</b>		
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.7E-05		1.88E-02	1.88E-02			6.57E-04	<b>1.9E-02</b>		
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	2.2E-04	3.94E-03	4.72E-03	4.72E-03			1.7E+00	<b>1.72</b>		
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.7E-04	2.63E-03	9.39E-03	9.39E-03			2.13E-01	<b>0.21</b>		
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				1.1E-04	1.31E-03	3.54E-04	3.54E-04				<b>1.3E-03</b>		
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	9.2E-04	1.31E-03	2.64E-01	2.64E-01			3.44E-02	<b>0.264</b>		
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.1E-05	6.57E-03	2.14E-03	2.14E-03			negl	<b>6.6E-03</b>		
1,1,1-Trichloroethane			2.36E-04	2.36E-04						7.38E-04	7.38E-04				<b>7.4E-04</b>		
1,3-Butadiene															<b>0.0E+00</b>		
Acetaldehyde															<b>0.0E+00</b>		
Acrolein															<b>0.0E+00</b>		
Benzene	2.1E-03		2.14E-04	2.14E-04				9.2E-04		6.70E-04	6.70E-04			6.88E-03	<b>6.9E-03</b>		
Bis(2-ethylhexyl)phthalate							2.2E-03							2.50E-06	<b>5.3E-04</b>		
Dichlorobenzene	1.2E-03						8.0E-07	5.3E-04							<b>2.0E-04</b>		
Ethylbenzene			6.36E-05	6.36E-05						1.99E-04	1.99E-04				<b>1.9E-02</b>		
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				3.3E-02	1.91E-01	1.03E-01	1.03E-01				<b>0.191</b>		
Hexane	1.8E+00							0.79							<b>0.788</b>		
Phenol							2.4E-03							7.51E-03	<b>7.5E-03</b>		
Toluene	3.4E-03		6.20E-03	6.20E-03				1.5E-03		1.94E-02	1.94E-02				<b>1.9E-02</b>		
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		3.54E-03	3.54E-03			1.22E-01	<b>1.2E-01</b>		
Polycyclic Organic Matter		3.30E-03							1.03E-02						<b>1.0E-02</b>		
Xylene			1.09E-04	1.09E-04						3.41E-04	3.41E-04				<b>3.4E-04</b>		
<b>Total HAPs</b>								<b>0.83</b>	<b>0.22</b>	<b>0.45</b>	<b>0.45</b>	<b>0</b>	<b>0</b>	<b>43.84</b>	<b>45.12</b>		

**Methodology**

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

**Abbreviations**

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

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

**Appendix A.1: Unlimited Emissions Calculations  
Greenhouse Gas (CO<sub>2</sub>e) Emissions from the  
Dryer/Mixer Fuel Combustion with Maximum Capacity: 100 MMBtu/hr**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

**Maximum Capacity**

Maximum Fuel Input Rate =	100	MMBtu/hr								
Natural Gas Usage =	876	MMCF/yr								
No. 2 Fuel Oil Usage =	6,257,143	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Usage =	6,257,143	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	6,257,143	gal/yr, and	0.50	% sulfur						
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	6,257,143	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% chlorine,	0.010	% lead

**Unlimited/Uncontrolled Emissions**

CO <sub>2</sub> e Fraction	Emission Factor (units)							Global Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential
CO <sub>2</sub>	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15	Carbon dioxide	CO <sub>2</sub>	1
CH <sub>4</sub>	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH <sub>4</sub>	21
N <sub>2</sub> O	2.2	0.26	0.19	0.53	0.9	0.9	0.18	Nitrous oxide	N <sub>2</sub> O	310

CO <sub>2</sub> e Fraction	Unlimited/Uncontrolled Potential to Emit (tons/yr)						
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)
CO <sub>2</sub>	52,630.89	70,397.27	75,565.84	77,698.21	0	0	68,904.14
CH <sub>4</sub>	1.09	2.96	3.02	3.13	0	0	2.79
N <sub>2</sub> O	0.96	0.81	0.60	1.66	0	0	0.56
<b>Total</b>	<b>52,632.94</b>	<b>70,400.94</b>	<b>75,569.46</b>	<b>77,703.00</b>	<b>0</b>	<b>0</b>	<b>68,907.49</b>
CO <sub>2</sub> e Equivalent Emissions (tons/yr)	52,952.54	70,709.41	75,816.58	78,277.93	0	0	69,137.37

<b>CO<sub>2</sub>e for Worst Case Fuel* (tons/yr)</b>
<b>78,277.93</b>

**Methodology**

Fuel Usage from TSD Appendix A.1, page 1 of 14.  
 Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 MMCF/1,000 MMBtu]  
 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.140 MMBtu]  
 Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.0915 MMBtu]  
 Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.102 MMBtu]

**Abbreviations**

PTE = Potential to Emit  
 CO<sub>2</sub> = Carbon Dioxide  
 CH<sub>4</sub> = Methane  
 N<sub>2</sub>O = Nitrogen Dioxide

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

Natural Gas: Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N<sub>2</sub>O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2, No. 4, and Residual (No. 5 or No. 6) Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N<sub>2</sub>O from AP-42 Chapter 1.3 (dated 7/08), Table 1.3-8

Propane: Emission Factor for CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, has been converted from kg/mmBtu to lb/kgal. Emission Factors for CO<sub>2</sub> and N<sub>2</sub>O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Butane: Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N<sub>2</sub>O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Waste Oil: Emission Factors for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

**Emission Factor (EF) Conversions:**

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

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

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

Unlimited Potential to Emit CO<sub>2</sub>e (tons/yr) = Unlimited Potential to Emit CO<sub>2</sub> of "worst case" fuel (ton/yr) x CO<sub>2</sub> GWP (1) + Unlimited Potential to Emit CH<sub>4</sub> of "worst case" fuel (ton/yr) x CH<sub>4</sub> GWP (21) + Unlimited Potential to Emit N<sub>2</sub>O of "worst case" fuel (ton/yr) x N<sub>2</sub>O GWP (310).

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Maximum Hourly Asphalt Production = 400 ton/hr  
 Maximum Annual Asphalt Production = 3,504,000 ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	49,056.00	49,056.00	49,056.00	<b>49,056.00</b>
PM10*	6.5	6.5	6.5	11,388.00	11,388.00	11,388.00	<b>11,388.00</b>
PM2.5*	1.5	1.5	1.5	2,628.00	2,628.00	2,628.00	<b>2,628.00</b>
SO2**	0.0034	0.011	0.058	5.96	19.27	101.62	<b>101.62</b>
NOx**	0.026	0.055	0.055	45.55	96.36	96.36	<b>96.36</b>
VOC**	0.032	0.032	0.032	56.06	56.06	56.06	<b>56.06</b>
CO***	0.13	0.13	0.13	227.76	227.76	227.76	<b>227.76</b>
<b>Hazardous Air Pollutant</b>							
HCl			2.10E-04			3.68E-01	<b>0.37</b>
Antimony	1.80E-07	1.80E-07	1.80E-07	3.15E-04	3.15E-04	3.15E-04	<b>3.15E-04</b>
Arsenic	5.60E-07	5.60E-07	5.60E-07	9.81E-04	9.81E-04	9.81E-04	<b>9.81E-04</b>
Beryllium	negl	negl	negl	negl	negl	negl	<b>0.00E+00</b>
Cadmium	4.10E-07	4.10E-07	4.10E-07	7.18E-04	7.18E-04	7.18E-04	<b>7.18E-04</b>
Chromium	5.50E-06	5.50E-06	5.50E-06	9.64E-03	9.64E-03	9.64E-03	<b>9.64E-03</b>
Cobalt	2.60E-08	2.60E-08	2.60E-08	4.56E-05	4.56E-05	4.56E-05	<b>4.56E-05</b>
Lead	6.20E-07	1.50E-05	1.50E-05	1.09E-03	2.63E-02	2.63E-02	<b>2.63E-02</b>
Manganese	7.70E-06	7.70E-06	7.70E-06	1.35E-02	1.35E-02	1.35E-02	<b>1.35E-02</b>
Mercury	2.40E-07	2.60E-06	2.60E-06	4.20E-04	4.56E-03	4.56E-03	<b>4.56E-03</b>
Nickel	6.30E-05	6.30E-05	6.30E-05	0.11	0.11	0.11	<b>0.11</b>
Selenium	3.50E-07	3.50E-07	3.50E-07	6.13E-04	6.13E-04	6.13E-04	<b>6.13E-04</b>
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.07	0.07	0.07	<b>0.07</b>
Acetaldehyde			1.30E-03			2.28	<b>2.28</b>
Acrolein			2.60E-05			4.56E-02	<b>4.56E-02</b>
Benzene	3.90E-04	3.90E-04	3.90E-04	0.68	0.68	0.68	<b>0.68</b>
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.42	0.42	0.42	<b>0.42</b>
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	5.43	5.43	5.43	<b>5.43</b>
Hexane	9.20E-04	9.20E-04	9.20E-04	1.61	1.61	1.61	<b>1.61</b>
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.08	0.08	0.08	<b>0.08</b>
MEK			2.00E-05			0.04	<b>0.04</b>
Propionaldehyde			1.30E-04			0.23	<b>0.23</b>
Quinone			1.60E-04			0.28	<b>0.28</b>
Toluene	1.50E-04	2.90E-03	2.90E-03	0.26	5.08	5.08	<b>5.08</b>
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.33	1.54	1.54	<b>1.54</b>
Xylene	2.00E-04	2.00E-04	2.00E-04	0.35	0.35	0.35	<b>0.35</b>
						<b>Total HAPs</b>	<b>18.68</b>
						<b>Worst Single HAP</b>	<b>5.43 (formaldehyde)</b>

**Methodology**

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

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

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

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

**Abbreviations**

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

**Appendix A.1: Unlimited Emissions Calculations  
Greenhouse Gas (CO<sub>2</sub>e) Emissions from the  
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Maximum Hourly Asphalt Production = 400 ton/hr  
 Maximum Annual Asphalt Production = 3,504,000 ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO <sub>2</sub> e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO <sub>2</sub>	33	33	33	1	57,816.00	57,816.00	57,816.00	58,257.50
CH <sub>4</sub>	0.0120	0.0120	0.0120	21	21.02	21.02	21.02	
N <sub>2</sub> O				310	0	0	0	
<b>Total</b>					57,837.02	57,837.02	57,837.02	
<b>CO<sub>2</sub>e Equivalent Emissions (tons/yr)</b>					58,257.50	58,257.50	58,257.50	

**Methodology**

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

There are no emission factors for N<sub>2</sub>O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N<sub>2</sub>O emission anticipated from this process.

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

Unlimited Potential to Emit CO<sub>2</sub>e (tons/yr) = Unlimited Potential to Emit CO<sub>2</sub> of "worst case" fuel (ton/yr) x CO<sub>2</sub> GWP (1) + Unlimited Potential to Emit CH<sub>4</sub> of "worst case" fuel (ton/yr) x CH<sub>4</sub> GWP (21) + Unlimited Potential to Emit N<sub>2</sub>O of "worst case" fuel (ton/yr) x N<sub>2</sub>O GWP (310).

**Abbreviations**

CO<sub>2</sub> = Carbon Dioxide    CH<sub>4</sub> = Methane    N<sub>2</sub>O = Nitrogen Dioxide    PTE = Potential to Emit

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Maximum Annual Blast Furnace Slag Usage = 

1,471,680
-----------

 ton/yr      

1.50
------

 % sulfur  
 Maximum Annual Steel Slag Usage = 

1,471,680
-----------

 ton/yr      

0.66
------

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.74	544.52
Steel Slag**	0.0014	1.03

**Methodology**

The maximum annual slag usage was provided by the source.

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

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

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

**Abbreviations**

SO2 = Sulfur Dioxide

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Location:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr  
 Natural Gas Usage = 18 MMCF/yr  
 No. 2 Fuel Oil Usage = 0 gal/yr, and 0.00 % sulfur

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.017	0	0.02
PM10/PM2.5	7.6	3.3	0.067	0	0.07
SO2	0.6	71.0	0.005	0	0.01
NOx	100	20.0	0.876	0	0.88
VOC	5.5	0.20	0.048	0	0.05
CO	84	5.0	0.736	0	0.74
<b>Hazardous Air Pollutant</b>					
Arsenic	2.0E-04	5.6E-04	1.8E-06	0	1.8E-06
Beryllium	1.2E-05	4.2E-04	1.1E-07	0	1.1E-07
Cadmium	1.1E-03	4.2E-04	9.6E-06	0	9.6E-06
Chromium	1.4E-03	4.2E-04	1.2E-05	0	1.2E-05
Cobalt	8.4E-05		7.4E-07		7.4E-07
Lead	5.0E-04	1.3E-03	4.4E-06	0	4.4E-06
Manganese	3.8E-04	8.4E-04	3.3E-06	0	3.3E-06
Mercury	2.6E-04	4.2E-04	2.3E-06	0	2.3E-06
Nickel	2.1E-03	4.2E-04	1.8E-05	0	1.8E-05
Selenium	2.4E-05	2.1E-03	2.1E-07	0	2.1E-07
Benzene	2.1E-03		1.8E-05		1.8E-05
Dichlorobenzene	1.2E-03		1.1E-05		1.1E-05
Ethylbenzene					0.0E+00
Formaldehyde	7.5E-02	6.10E-02	6.6E-04	0	6.6E-04
Hexane	1.8E+00		1.6E-02		1.6E-02
Phenol					0.0E+00
Toluene	3.4E-03		3.0E-05		3.0E-05
Total PAH Haps	negl		negl		0.0E+00
Polycyclic Organic Matter		3.30E-03		0	0.0E+00
<b>Total HAPs =</b>			<b>1.7E-02</b>	<b>0</b>	<b>0.017</b>
<b>Worst Single HAP =</b>			<b>1.6E-02</b>	<b>0</b>	<b>1.6E-02</b>
			<b>(Hexane)</b>	<b>(Formaldehyde)</b>	<b>(Hexane)</b>

**Methodology**

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 MMCF/1,000 MMBtu]  
 Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.140 MMBtu]  
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] \* [Emission Factor (lb/MMCF)] \* [ton/2000 lbs]  
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] \* [Emission Factor (lb/kgal)] \* [kgal/1000 gal] \* [ton/2000 lbs]  
 Sources of AP-42 Emission Factors for fuel combustion:

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

**Abbreviations**

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

**Appendix A.1: Unlimited Emissions Calculations  
Greenhouse Gas (CO<sub>2</sub>e) Emissions from  
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr  
 Natural Gas Usage = 18 MMCF/yr  
 No. 2 Fuel Oil Usage = 0 gal/yr, 0.00 % sulfur

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)		Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr)	
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)		Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)
CO <sub>2</sub>	120,161.84	22,501.41	1	1,052.62	0
CH <sub>4</sub>	2.49	0.91	21	0.02	0
N <sub>2</sub> O	2.2	0.26	310	0.02	0
				1,052.66	0

<b>Worse Case CO<sub>2</sub>e Emissions (tons/yr)</b>
<b>1,059.05</b>

CO <sub>2</sub> e Equivalent Emissions (tons/yr)	1,059.05	0
--	----------	---

**Methodology**

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.  
 Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 MMCF/1,000 MMBtu]  
 Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] \* [8,760 hrs/yr] \* [1 gal/0.140 MMBtu]  
 Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)  
 Natural Gas: Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N<sub>2</sub>O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2  
 No. 2 Fuel Oil: Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N<sub>2</sub>O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

**Emission Factor (EF) Conversions**

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

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

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

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

Unlimited Potential to Emit CO<sub>2</sub>e (tons/yr) = Unlimited Potential to Emit CO<sub>2</sub> of "worst case" fuel (ton/yr) x CO<sub>2</sub> GWP (1) + Unlimited Potential to Emit CH<sub>4</sub> of "worst case" fuel (ton/yr) x CH<sub>4</sub> GWP (21) + Unlimited Potential to Emit N<sub>2</sub>O of "worst case" fuel (ton/yr) x N<sub>2</sub>O GWP (310).

**Abbreviations**

CO<sub>2</sub> = Carbon Dioxide  
 CH<sub>4</sub> = Methane  
 N<sub>2</sub>O = Nitrogen Dioxide  
 PTE = Potential to Emit

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	2.28E-04	0	0.000
CO	8.90E-06	0.0012	0.078	0	0.078
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1752.00	0	1752.00
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.28E-04	0	2.28E-04
Acenaphthene		5.30E-07		0	0.00E+00
Acenaphthylene		2.00E-07		0	0.00E+00
Anthracene		1.80E-07		0	0.00E+00
Benzo(b)fluoranthene		1.00E-07		0	0.00E+00
Fluoranthene		4.40E-08		0	0.00E+00
Fluorene		3.20E-08		0	0.00E+00
Naphthalene		1.70E-05		0	0.00E+00
Phenanthrene		4.90E-06		0	0.00E+00
Pyrene		3.20E-08		0	0.00E+00

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

**Methodology**

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

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

**Abbreviations**

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

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

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

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

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

**Hazardous Air Pollutants (HAPs)**

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

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

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

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

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

**Green House Gas Emissions (GHG)**

	Pollutant		
	CO <sub>2</sub> <sup>5</sup>	CH <sub>4</sub> <sup>6</sup>	N <sub>2</sub> O <sup>6</sup>
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Potential Emission in tons/yr	0.00	0.000	0.000

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

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

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

<sup>6</sup>Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) \* 2.20462 (lb/kg) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	0.00
CO <sub>2</sub> e Total in tons/yr	0.00

**Methodology**

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

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

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

CH<sub>4</sub> and N<sub>2</sub>O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

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

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

CO<sub>2</sub>e (tons/yr) = CO<sub>2</sub> Potential Emission ton/yr x CO<sub>2</sub> GWP (1) + CH<sub>4</sub> Potential Emission ton/yr x CH<sub>4</sub> GWP (21) + N<sub>2</sub>O Potential Emission ton/yr x N<sub>2</sub>O GWP (310).

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

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

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

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

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

<sup>2</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

**Hazardous Air Pollutants (HAPs)**

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

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

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

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

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

**Green House Gas Emissions (GHG)**

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

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

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

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

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

<sup>7</sup>Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) \* 2.20462 (lb/kg) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Summed Potential Emissions in tons/yr</b>	<b>0.00</b>
<b>CO2e Total in tons/yr</b>	<b>0.00</b>

**Methodology**

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

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

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

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

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

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Potential Emission ton/yr x N2O GWP (310).

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	3,504,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.91	1.03	NA	1.94
Organic PM	3.4E-04	2.5E-04	NA	0.60	0.445	NA	1.04
TOC	0.004	0.012	0.001	7.29	21.35	1.927	30.6
CO	0.001	0.001	3.5E-04	2.36	2.067	0.617	5.05

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

<b>PM/HAPs</b>	<b>0.042</b>	<b>0.050</b>	<b>0</b>	<b>0.093</b>
<b>VOC/HAPs</b>	<b>0.108</b>	<b>0.272</b>	<b>0.028</b>	<b>0.408</b>
<b>non-VOC/HAPs</b>	<b>5.6E-04</b>	<b>5.8E-05</b>	<b>1.5E-04</b>	<b>7.7E-04</b>
<b>non-VOC/non-HAPs</b>	<b>0.53</b>	<b>0.30</b>	<b>0.14</b>	<b>0.97</b>

<b>Total VOCs</b>	<b>6.85</b>	<b>21.35</b>	<b>1.8</b>	<b>30.0</b>
<b>Total HAPs</b>	<b>0.15</b>	<b>0.32</b>	<b>0.029</b>	<b>0.50</b>
		<b>Worst Single HAP</b>		<b>0.155</b>
				<b>(formaldehyde)</b>

**Methodology**

The asphalt temperature and volatility factor were provided by the source.

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

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

Total PM/PM10/PM2.5 Ef = 0.000181 + 0.00141(-V)e<sup>^</sup>((0.0251)(T+460)-20.43)

Organic PM Ef = 0.00141(-V)e<sup>^</sup>((0.0251)(T+460)-20.43)

TOC Ef = 0.0172(-V)e<sup>^</sup>((0.0251)(T+460)-20.43)

CO Ef = 0.00558(-V)e<sup>^</sup>((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<sup>^</sup>((0.0251)(T+460)-20.43)

Organic PM Ef = 0.00105(-V)e<sup>^</sup>((0.0251)(T+460)-20.43)

TOC Ef = 0.0504(-V)e<sup>^</sup>((0.0251)(T+460)-20.43)

CO Ef = 0.00488(-V)e<sup>^</sup>((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:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)				
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total	
<b>PAH HAPs</b>											
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	1.6E-03	2.1E-03	NA	3.6E-03	
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.7E-04	6.2E-05	NA	2.3E-04	
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	4.2E-04	5.8E-04	NA	1.0E-03	
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.1E-04	2.5E-04	NA	3.6E-04	
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	4.5E-05	0	NA	4.5E-05	
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.3E-05	0	NA	1.3E-05	
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.1E-05	0	NA	1.1E-05	
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.4E-05	0	NA	1.4E-05	
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	4.7E-05	4.2E-05	NA	8.9E-05	
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	6.2E-04	9.3E-04	NA	1.5E-03	
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	2.2E-06	0	NA	2.2E-06	
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	3.0E-04		NA	3.0E-04	
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	4.6E-03	4.5E-03	NA	9.1E-03	
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	2.8E-06	0	NA	2.8E-06	
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.4E-02	2.3E-02	NA	0.038	
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	7.5E-03	8.1E-03	NA	1.6E-02	
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.3E-04	1.3E-04	NA	2.6E-04	
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	4.8E-03	8.0E-03	NA	1.3E-02	
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	9.0E-04	2.0E-03	NA	2.9E-03	
<b>Total PAH HAPs</b>							<b>0.035</b>	<b>0.050</b>	<b>NA</b>	<b>0.086</b>	
<b>Other semi-volatile HAPs</b>											
Phenol		PM/HAP	---	Organic PM	1.18%	0	7.0E-03	0	0	7.0E-03	

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

**Methodology**

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

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

PM = Particulate Matter  
HAP = Hazardous Air Pollutant  
POM = Polycyclic Organic Matter

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

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

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
<b>VOC</b>		VOC	---	TOC	94%	100%	<b>6.85</b>	<b>21.35</b>	<b>1.81</b>	<b>30.01</b>
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	4.7E-01	5.6E-02	1.3E-01	0.654
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	3.4E-03	1.2E-02	8.9E-04	0.016
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	5.2E-02	2.3E-01	1.4E-02	0.300
<b>Total non-VOC/non-HAPS</b>					<b>7.30%</b>	<b>1.40%</b>	<b>0.532</b>	<b>0.299</b>	<b>0.141</b>	<b>0.97</b>
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	3.8E-03	6.8E-03	1.0E-03	1.2E-02
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	7.0E-04	1.0E-03	1.9E-04	1.9E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	3.6E-03	8.3E-03	9.4E-04	1.3E-02
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	9.5E-04	3.4E-03	2.5E-04	4.6E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	1.5E-05	8.5E-04	4.0E-06	8.7E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.1E-03	4.9E-03	2.9E-04	6.3E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	8.0E-03	0	2.1E-03	1.0E-02
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	2.0E-02	8.1E-03	5.4E-03	0.034
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	6.4E-03	1.5E-01	1.7E-03	0.155
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.1E-02	2.1E-02	2.9E-03	0.035
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.3E-04	6.6E-05	3.5E-05	2.3E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	5.8E-05	0	5.8E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	5.3E-04	1.2E-03	1.4E-04	1.8E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	5.6E-04	0	1.5E-04	7.1E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	1.5E-02	1.3E-02	4.0E-03	0.033
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	9.5E-05	0	2.5E-05	1.2E-04
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	3.0E-02	4.3E-02	7.9E-03	0.080
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	5.8E-03	1.2E-02	1.5E-03	2.0E-02
<b>Total volatile organic HAPs</b>					<b>1.50%</b>	<b>1.30%</b>	<b>0.109</b>	<b>0.278</b>	<b>0.029</b>	<b>0.416</b>

**Methodology**

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] \* [TOC (tons/yr)]  
Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

TOC = Total Organic Compounds  
HAP = Hazardous Air Pollutant  
VOC = Volatile Organic Compound  
MTBE = Methyl tert butyl ether

**Appendix A.1: Unlimited Emissions Calculations  
Material Storage Piles**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.80	0.439	0.154
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.40	0.148	0.052
Gravel	1.6	1.85	1.20	0.406	0.142
Shingles	0.5	0.58	1.50	0.158	0.055
Slag	3.8	4.40	1.00	0.803	0.281
<b>Totals</b>				<b>2.39</b>	<b>0.84</b>

**Methodology**

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) \* (Maximum Pile Size (acres)) \* (ton/2000 lbs) \* (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) \* 35%

\*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

\*\*Maximum anticipated pile size (acres) provided by the source.

PM2.5 = PM10

**Abbreviations**

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

RAP = Recycled Asphalt Pavement

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

$$E_f = k \cdot (0.0032)^k \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

where:  $E_f$  = Emission factor (lb/ton)

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

Maximum Annual Asphalt Production =	3,504,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	3,328,800	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	3.77	1.78	0.27
Front-end loader dumping of materials into feeder bins	3.77	1.78	0.27
Conveyor dropping material into dryer/mixer or batch tower	3.77	1.78	0.27
<b>Total (tons/yr)</b>	<b>11.32</b>	<b>5.35</b>	<b>0.81</b>

**Methodology**

The percent asphalt cement/binder provided by the source.

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

Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) \* (Emission Factor (lb/ton)) \* (ton/2000 lbs)

Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives

\*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

**Material Screening and Conveying (AP-42 Section 11.19.2)**

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	8.99	3.99
Screening	0.025	0.0087	41.61	14.48
Conveying	0.003	0.0011	4.99	1.83
<b>Unlimited Potential to Emit (tons/yr) =</b>			<b>55.59</b>	<b>20.31</b>

**Methodology**

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

Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] \* [Emission Factor (lb/ton)] \* [ton/2000 lbs]

Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

\*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

\*\*Assumes PM10 = PM2.5

**Abbreviations**

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate matter (< 2.5 um)

PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations**  
**Unpaved Roads**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

**Unpaved Roads at Industrial Site**

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

Maximum Annual Asphalt Production = 3,504,000 tons/yr  
Percent Asphalt Cement/Binder (weight %) = 5.0%  
Maximum Material Handling Throughput = 3,328,800 tons/yr  
Maximum Asphalt Cement/Binder Throughput = 175,200 tons/yr  
Maximum No. 2 Fuel Oil Usage = 6,257,143 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	1.5E+05	5.9E+06	100	0.019	2,814.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.5E+05	2.5E+06	100	0.019	2,814.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	4.9E+03	2.3E+05	0	0.000	0.0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	4.9E+03	5.8E+04	0	0.000	0.0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	6.6E+02	2.9E+04	0	0.000	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	6.6E+02	7.9E+03	0	0.000	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	7.9E+05	1.5E+07	100	0.019	15,010.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	7.9E+05	1.2E+07	100	0.019	15,010.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.5E+05	6.0E+06	0	0.000	0.0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.5E+05	2.5E+06	0	0.000	0.0
<b>Total</b>						<b>2.2E+06</b>	<b>4.4E+07</b>		<b>3.6E+04</b>

Average Vehicle Weight Per Trip = 20.3 tons/trip  
Average Miles Per Trip = 0.016 miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

Mitigated Emission Factor, Eext =  $E \cdot [(365 - P)/365]$   
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, Eext =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	8.58	2.19	0.22	5.64	1.44	0.14	2.82	0.72	0.07
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	8.58	2.19	0.22	5.64	1.44	0.14	2.82	0.72	0.07
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	45.74	11.66	1.17	30.08	7.67	0.77	15.04	3.83	0.38
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	45.74	11.66	1.17	30.08	7.67	0.77	15.04	3.83	0.38
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Totals</b>		<b>108.64</b>	<b>27.69</b>	<b>2.77</b>	<b>71.44</b>	<b>18.21</b>	<b>1.82</b>	<b>35.72</b>	<b>9.10</b>	<b>0.91</b>

**Methodology**

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

**Abbreviations**

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

**Appendix A: Unlimited Emissions Calculations  
Paved Roads**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

**Paved Roads at Industrial Site**

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

Maximum Annual Asphalt Production	=	3,504,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	=	5.0%	
Maximum Material Handling Throughput	=	3,328,800	tons/yr
Maximum Asphalt Cement/Binder Throughput	=	175,200	tons/yr
Maximum No. 2 Fuel Oil Usage	=	6,257,143	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	1.5E+05	5.9E+06	700	0.133	19701.7
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	700	0.133	19701.7
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	4.9E+03	2.3E+05	700	0.133	645.2
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	4.9E+03	5.8E+04	700	0.133	645.2
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	6.6E+02	2.9E+04	700	0.133	87.6
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	6.6E+02	7.9E+03	700	0.133	87.6
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	7.9E+05	1.5E+07	700	0.133	105075.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	7.9E+05	1.2E+07	700	0.133	105075.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.5E+05	6.0E+06	700	0.133	19356.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	700	0.133	19356.1
<b>Total</b>						<b>2.2E+06</b>	<b>4.4E+07</b>		<b>2.9E+05</b>

Average Vehicle Weight Per Trip	=	20.3	tons/trip
Average Miles Per Trip	=	0.133	miles/trip

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

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

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$	
where p =	125 days per year
N =	365 days per year

Unmitigated Emission Factor, $E_f$	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, $E_{ext}$	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	1.46	0.29	0.07	1.34	0.27	0.07	0.67	0.13	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.46	0.29	0.07	1.34	0.27	0.07	0.67	0.13	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.048	0.010	2.4E-03	0.044	0.009	2.2E-03	0.022	4.4E-03	1.1E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.048	0.010	2.4E-03	0.044	0.009	2.2E-03	0.022	4.4E-03	1.1E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	6.5E-03	1.3E-03	3.2E-04	6.0E-03	1.2E-03	2.9E-04	3.0E-03	6.0E-04	1.5E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	6.5E-03	1.3E-03	3.2E-04	6.0E-03	1.2E-03	2.9E-04	3.0E-03	6.0E-04	1.5E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	7.81	1.56	0.38	7.14	1.43	0.35	3.57	0.71	0.18
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	7.81	1.56	0.38	7.14	1.43	0.35	3.57	0.71	0.18
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.44	0.29	0.07	1.32	0.26	0.06	0.66	0.13	0.03
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.44	0.29	0.07	1.32	0.26	0.06	0.66	0.13	0.03
<b>Totals</b>		<b>21.54</b>	<b>4.31</b>	<b>1.06</b>	<b>19.70</b>	<b>3.94</b>	<b>0.97</b>	<b>9.85</b>	<b>1.97</b>	<b>0.48</b>

**Methodology**

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

**Abbreviations**

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

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Maximum Annual Asphalt Production = 3,504,000 tons/yr  
 Percent Asphalt Cement/Binder (weight %) = 5.0%  
 Maximum Asphalt Cement/Binder Throughput = 175,200 tons/yr

**Volatile Organic Compounds**

	Maximum weight % of VOC solvent in binder*	Weight % VOC solvent in binder that evaporates	Maximum VOC Solvent Usage (tons/yr)	PTE of VOC (tons/yr)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	44,325.6	42,109.3
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	50,107.2	35,075.0
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	35,040.0	8,760.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	26,280.0	12,193.9
Other asphalt with solvent binder	25.9%	2.5%	45,376.8	1,134.4
<b>Worst Case PTE of VOC =</b>				<b>42,109.3</b>

**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
<b>PTE of Total HAPs (tons/yr) =</b>	<b>10,983.67</b>
<b>PTE of Single HAP (tons/yr) =</b>	<b>3,789.84 Xylenes</b>

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

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

**Methodology**

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

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

**Abbreviations**

VOC = Volatile Organic Compounds  
 PTE = Potential to Emit

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

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

$$\begin{aligned} \text{Gasoline Throughput} &= 0 \text{ gallons/day} \\ &= 0.0 \text{ kgal/yr} \end{aligned}$$

**Volatile Organic Compounds**

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

**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
<b>Limited PTE of Total HAPs (tons/yr) =</b>	<b>0.00</b>
<b>Limited PTE of Single HAP (tons/yr) =</b>	<b>0.00 Xylenes</b>

**Methodology**

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] \* [365 days/yr] \* [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] \* [Emission Factor (lb/kgal)] \* [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

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

**Abbreviations**

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary**  
**Entire Source - Drum Mix**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

**Asphalt Plant Limitations - Drum Mix**

Maximum Hourly Asphalt Production	400	ton/hr									
Annual Asphalt Production Limitation	1,478,987	ton/yr									
Blast Furnace Slag Usage Limitation	150,000	ton/yr	1.50	% sulfur							
Steel Slag Usage Limitation	1,478,987		0.66	% sulfur							
Maximum Dryer Fuel Input Rate	100	MMBtu/hr									
Natural Gas Limitation	876	MMCF/yr									
No. 2 Fuel Oil Limitation	1,225,204	gal/yr, and	0.50	% sulfur							
No. 4 Fuel Oil Limitation	1,159,860	gal/yr, and	0.50	% sulfur							
Residual (No. 5 or No. 6) Fuel Oil Limitation	1,108,146	gal/yr, and	0.50	% sulfur							
Propane Limitation	0	gal/yr, and	0	gr/100 ft3 sulfur							
Butane Limitation	0	gal/yr, and	0	gr/100 ft3 sulfur							
Used/Waste Oil Limitation	591,765	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% chlorine,	0.010	% lead	
Diesel Fuel Limitation - Generator < 600 HP	0	gal/yr, and									
Diesel Fuel Limitation - Generator > 600 HP	0	gal/yr	0	% sulfur							
PM Dryer/Mixer Limitation	0.274	lb/ton of asphalt production									
PM10 Dryer/Mixer Limitation	0.112	lb/ton of asphalt production									
PM2.5 Dryer/Mixer Limitation	0.119	lb/ton of asphalt production									
SO2 Dryer/Mixer Limitation	0.058	lb/ton of asphalt production									
NOx Dryer/Mixer Limitation	0.055	lb/ton of asphalt production									
VOC Dryer/Mixer Limitation	0.032	lb/ton of asphalt production									
CO Dryer/Mixer Limitation	0.130	lb/ton of asphalt production									
Blast Furnace Slag SO2 Dryer/Mixer Limitation	0.740	lb/ton of slag processed									
Steel Slag SO2 Dryer/Mixer Limitation	0.0014	lb/ton of slag processed									
Cold Mix Asphalt VOC Limitation	62.62	tons/yr									
HCl Limitation	13.2	lb/kgal									

**Limited/Controlled Emissions**

Process Description	Limited/Controlled Potential Emissions (tons/year)									
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO <sub>2</sub> e	Total HAPs	Worst Case HAP
<b>Ducted Emissions</b>										
Dryer Fuel Combustion (worst case)	19.32	15.39	15.39	43.49	83.22	2.41	36.79	52,952.54	5.03	3.91 (HCL)
Dryer/Mixer (Process)	202.45	82.60	87.98	42.89	40.67	23.66	96.13	24,589.64	7.88	2.29 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	55.50	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.88	0.05	0.74	1,752.00	0.02	0.016 (hexane)
Diesel-Fired Generator < 600 HF	0	0	0	0	0	0	0	0	0	0
Diesel-Fired Generator > 600 HF	0	0	0	0	0	0	0	0	0	0
<b>Worst Case Emissions*</b>	<b>202.47</b>	<b>82.67</b>	<b>88.05</b>	<b>99.00</b>	<b>84.10</b>	<b>23.71</b>	<b>96.87</b>	<b>54,704.54</b>	<b>7.90</b>	<b>3.91 (HCL)</b>
<b>Fugitive Emissions</b>										
Asphalt Load-Out, Silo Filling, On-Site Yard	0.82	0.82	0.82	0	0	12.67	2.13	0	0.21	0.07 (formaldehyde)
Material Storage Piles	2.39	0.84	0.84	0	0	0	0	0	0	0
Material Processing and Handling	4.78	2.26	0.34	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	23.46	8.57	8.57	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	15.08	3.84	0.38	0	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	62.62	0	0	16.33	5.64 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	negl
<b>Total Fugitive Emissions</b>	<b>46.53</b>	<b>16.33</b>	<b>10.95</b>	<b>0.00</b>	<b>0.00</b>	<b>75.29</b>	<b>2.13</b>	<b>0.00</b>	<b>16.55</b>	<b>5.64 (xylenes)</b>
<b>Totals Limited/Controlled Emissions</b>	<b>249.00</b>	<b>99.00</b>	<b>99.00</b>	<b>99.00</b>	<b>84.10</b>	<b>99.00</b>	<b>99.00</b>	<b>54,704.54</b>	<b>24.45</b>	<b>5.64 (xylenes)</b>

negl = negligible

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

\*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP

Fuel component percentages provided by the source.

**Appendix A.2: Limited Emissions Summary**  
**Dryer/Mixer Fuel Combustion with Maximum Capacity > 100 MMBtu/hr**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

**Fuel Limitations**

Maximum Fuel Input Rate	100	MMBtu/hr															
Natural Gas Limitation	876	MMCF/yr															
No. 2 Fuel Oil Limitation	1,225,204	gal/yr, and	0.50	% sulfur													
No. 4 Fuel Oil Limitation	1,159,860	gal/yr, and	0.50	% sulfur													
Residual (No. 5 or No. 6) Fuel Oil Limitation	1,108,146	gal/yr, and	0.50	% sulfur													
Propane Limitation	0	gal/yr, and	0	gr/100 ft3 sulfur													
Butane Limitation	0	gal/yr, and	0	gr/100 ft3 sulfur													
Used/Waste Oil Limitation	591,765	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% chlorine	0.010	% lead							

**Limited Emissions**

Criteria Pollutant	Emission Factor (units)								Limited Potential to Emit (tons/yr)							
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)	
PM	1.9	2	7	7.815	0.5	0.6	65.28	0.83	1.23	4.06	4.33	0	0	19.32	19.32	
PM10/PM2.5	7.6	3.3	8.3	9.315	0.5	0.6	52.02	3.33	2.02	4.81	5.16	0	0	15.39	15.39	
SO2	0.6	71.0	75.0	78.5	0	0	147.0	0.26	43.49	43.49	43.49	0	0	43.49	43.49	
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	83.22	14.70	27.26	26.04	0	0	5.62	83.22	
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.41	0.12	0.12	0.16	0	0	0.30	2.41	
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	36.79	3.06	2.90	2.77	0	0	1.48	36.79	
<b>Hazardous Air Pollutant</b>																
HCl							13.2							3.91	3.91	
Antimony			5.25E-03	5.25E-03			negl			3.04E-03	2.91E-03				3.0E-03	
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	8.8E-05	3.43E-04	7.66E-04	7.31E-04			3.25E-02	3.3E-02	
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	5.3E-06	2.57E-04	1.61E-05	1.54E-05				2.6E-04	
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	4.8E-04	2.57E-04	2.31E-04	2.21E-04			2.75E-03	2.8E-03	
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	6.1E-04	2.57E-04	4.90E-04	4.68E-04			5.92E-03	5.9E-03	
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.7E-05		3.49E-03	3.34E-03			6.21E-05	3.5E-03	
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	2.2E-04	7.72E-04	8.76E-04	8.37E-04			1.6E-01	0.16	
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.7E-04	5.15E-04	1.74E-03	1.66E-03			2.01E-02	0.02	
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				1.1E-04	2.57E-04	6.55E-05	6.26E-05				2.6E-04	
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	9.2E-04	2.57E-04	4.90E-02	4.68E-02			3.25E-03	0.049	
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.1E-05	1.29E-03	3.96E-04	3.78E-04			negl	1.3E-03	
1,1,1-Trichloroethane			2.36E-04	2.36E-04						1.37E-04	1.31E-04				1.4E-04	
1,3-Butadiene															0.0E+00	
Acetaldehyde															0.0E+00	
Acrolein															0.0E+00	
Benzene	2.1E-03		2.14E-04	2.14E-04				9.2E-04		1.24E-04	1.19E-04				9.2E-04	
Bis(2-ethylhexyl)phthalate							2.2E-03							6.51E-04	6.5E-04	
Dichlorobenzene	1.2E-03						8.0E-07	5.3E-04						2.37E-07	5.3E-04	
Ethylbenzene			6.36E-05	6.36E-05						3.69E-05	3.52E-05				3.7E-05	
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				3.3E-02	3.74E-02	1.91E-02	1.83E-02				0.037	
Hexane	1.8E+00							0.79							0.788	
Phenol							2.4E-03							7.10E-04	7.1E-04	
Toluene	3.4E-03		6.20E-03	6.20E-03				1.5E-03		3.60E-03	3.44E-03				3.6E-03	
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		6.55E-04	6.26E-04			1.16E-02	1.2E-02	
Polycyclic Organic Matter		3.30E-03							2.02E-03						2.0E-03	
Xylene			1.09E-04	1.09E-04						6.32E-05	6.04E-05				6.3E-05	
<b>Total HAPs</b>								<b>0.83</b>	<b>0.04</b>	<b>0.08</b>	<b>0.08</b>	<b>0</b>	<b>0</b>	<b>4.15</b>	<b>5.03</b>	

**Methodology**

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) \* (Emission Factor (lb/MMCF)) \* (ton/2000 lbs)  
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) \* (Emission Factor (lb/kgal)) \* (kgal/1000 gal) \* (ton/2000 lbs)  
 Sources of AP-42 Emission Factors for fuel combustion:

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

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

**Abbreviations**

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

**Appendix A.2: Limited Emissions Summary  
Greenhouse Gas (CO<sub>2</sub>e) Emissions from the  
Dryer/Mixer Fuel Combustion with Maximum Capacity ≥ 100 MMBtu/hr**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

**Fuel Limitations**

Maximum Fuel Input Rate =	100	MMBtu/hr								
Natural Gas Limitation =	876	MMCF/yr								
No. 2 Fuel Oil Limitation =	1,225,204	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	1,159,860	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Limitation =	1,108,146	gal/yr, and	0.50	% sulfur						
Propane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Used/Waste Oil Limitation =	591,765	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% chlorine,	0.010	% lead

**Limited Emissions**

CO <sub>2</sub> e Fraction	Emission Factor (units)							Global Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential
CO <sub>2</sub>	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15	Carbon dioxide	CO <sub>2</sub>	1
CH <sub>4</sub>	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH <sub>4</sub>	21
N <sub>2</sub> O	2.20	0.26	0.19	0.53	0.90	0.90	0.18	Nitrous oxide	N <sub>2</sub> O	310

CO <sub>2</sub> e Fraction	Limited Potential to Emit (tons/yr)						
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)
CO <sub>2</sub>	52,630.89	13,784.41	14,007.32	13,760.43	0	0	6,516.56
CH <sub>4</sub>	1.09	0.56	0.56	0.55	0	0	0.26
N <sub>2</sub> O	0.96	0.16	0.11	0.29	0	0	0.05
<b>Total</b>	<b>52,632.94</b>	<b>13,785.13</b>	<b>14,007.99</b>	<b>13,761.28</b>	<b>0</b>	<b>0</b>	<b>6,516.88</b>

<b>CO<sub>2</sub>e for Worst Case Fuel* (tons/yr)</b>
<b>52,952.54</b>

CO <sub>2</sub> e Equivalent Emissions (tons/yr)	52,952.54	13,845.53	14,053.80	13,863.10	0	0	6,538.62
--	-----------	-----------	-----------	-----------	---	---	----------

**Methodology**

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

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

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

Natural Gas: Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N<sub>2</sub>O from AP-42 Chapter No. 2, No. 4, and Residual (No. 5 or No. 6) Fuel Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N<sub>2</sub>O from AP-42 Chapter 1.3 Oil: (dated 5/10), Table 1.3-8

Propane and Butane: Emission Factors for CO<sub>2</sub> and CH<sub>4</sub> from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N<sub>2</sub>O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Waste Oil: Emission Factors for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions

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

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

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) \* (Emission Factor (lb/MMCF)) \* (ton/2000 lbs)

All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) \* (Emission Factor (lb/kgal)) \* (kgal/1000 gal) \* (ton/2000 lbs)

Limited CO<sub>2</sub>e Emissions (tons/yr) = CO<sub>2</sub> Potential Emission of "worst case" fuel (ton/yr) x CO<sub>2</sub> GWP (1) + CH<sub>4</sub> Potential Emission of "worst case" fuel (ton/yr) x CH<sub>4</sub> GWP (21) + N<sub>2</sub>O Potential Emission of "worst case" fuel (ton/yr) x N<sub>2</sub>O GWP (310).

**Abbreviations**

CH<sub>4</sub> = Methane

CO<sub>2</sub> = Carbon Dioxide

N<sub>2</sub>O = Nitrogen Dioxide

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Dryer/Mixer - Process Emissions**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Maximum Hourly Asphalt Production =	400	ton/hr
Annual Asphalt Production Limitation =	1,478,987	ton/yr
PM Dryer/Mixer Limitation =	0.274	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.112	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.119	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.274	0.274	0.274	202.5	202.5	202.5	202.5
PM10*	0.112	0.112	0.112	82.6	82.6	82.6	82.6
PM2.5*	0.119	0.119	0.119	88.0	88.0	88.0	88.0
SO2**	0.003	0.011	0.058	2.5	8.1	42.9	42.9
NOx**	0.026	0.055	0.055	19.2	40.7	40.7	40.7
VOC**	0.032	0.032	0.032	23.7	23.7	23.7	23.7
CO***	0.130	0.130	0.130	96.1	96.1	96.1	96.1
<b>Hazardous Air Pollutant</b>							
HCl			2.10E-04			0.16	0.16
Antimony	1.80E-07	1.80E-07	1.80E-07	1.33E-04	1.33E-04	1.33E-04	1.33E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	4.14E-04	4.14E-04	4.14E-04	4.14E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	3.03E-04	3.03E-04	3.03E-04	3.03E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	4.07E-03	4.07E-03	4.07E-03	4.07E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.92E-05	1.92E-05	1.92E-05	1.92E-05
Lead	6.20E-07	1.50E-05	1.50E-05	4.58E-04	1.11E-02	1.11E-02	1.11E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	5.69E-03	5.69E-03	5.69E-03	5.69E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.77E-04	1.92E-03	1.92E-03	1.92E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	4.66E-02	4.66E-02	4.66E-02	4.66E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	2.59E-04	2.59E-04	2.59E-04	2.59E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	2.96E-02	2.96E-02	2.96E-02	2.96E-02
Acetaldehyde			1.30E-03			0.96	0.96
Acrolein			2.60E-05			1.92E-02	1.92E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.29	0.29	0.29	0.29
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.18	0.18	0.18	0.18
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	2.29	2.29	2.29	2.29
Hexane	9.20E-04	9.20E-04	9.20E-04	0.68	0.68	0.68	0.68
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.04	0.04	0.04	0.04
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.10	0.10
Quinone			1.60E-04			0.12	0.12
Toluene	1.50E-04	2.90E-03	2.90E-03	0.11	2.14	2.14	2.14
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.14	0.65	0.65	0.65
Xylene	2.00E-04	2.00E-04	2.00E-04	0.15	0.15	0.15	0.15
						<b>Total HAPs</b>	<b>7.88</b>
						<b>Worst Single HAP</b>	<b>2.29 (formaldehyde)</b>

**Methodology**

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

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

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

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

**Abbreviations**

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

**Appendix A.2: Limited Emissions Summary  
Greenhouse Gas (CO<sub>2</sub>e) Emissions from the  
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Maximum Hourly Asphalt Production = 400 ton/hr  
 Annual Asphalt Production Limitation = 1,478,987 ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Global Warming Potentials (GWP)	Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO <sub>2</sub> e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO <sub>2</sub>	33	33	33	1	24,403.29	24,403.29	24,403.29	24,589.64
CH <sub>4</sub>	0.0120	0.0120	0.0120	21	8.87	8.87	8.87	
N <sub>2</sub> O				310	0	0	0	
<b>Total</b>					<b>24,412.16</b>	<b>24,412.16</b>	<b>24,412.16</b>	
<b>CO<sub>2</sub>e Equivalent Emissions (tons/yr)</b>					<b>24,589.64</b>	<b>24,589.64</b>	<b>24,589.64</b>	

**Methodology**

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

There are no emission factors for N<sub>2</sub>O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N<sub>2</sub>O emission anticipated from this process.

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

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

Limited CO<sub>2</sub>e Emissions (tons/yr) = CO<sub>2</sub> Potential Emission of "worst case" fuel (ton/yr) x CO<sub>2</sub> GWP (1) + CH<sub>4</sub> Potential Emission of "worst case" fuel (ton/yr) x CH<sub>4</sub> GWP (21) + N<sub>2</sub>O Potential Emission of "worst case" fuel (ton/yr) x N<sub>2</sub>O GWP (310).

**Abbreviations**

CO<sub>2</sub> = Carbon Dioxide

CH<sub>4</sub> = Methane

N<sub>2</sub>O = Nitrogen Dioxide

PTE = Potential to Emit



**Appendix A.2: Limited Emissions Summary  
Dryer/Mixer Slag Processing**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Limited Blast Furnace Slag Usage =  $\frac{150,000}{1,478,987}$  ton/yr  $\frac{1.50}{0.66}$  % sulfur  
 Limited Annual Steel Slag Usage =  $\frac{1,478,987}{1,478,987}$  ton/yr

Type of Slag	SO2 Emission Factor (lb/ton)	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.7400	55.5
Steel Slag**	0.0014	1.04

**Methodology**

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

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

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

**Abbreviations**

SO2 = Sulfur Dioxide

**Appendix A.2: Limited Emissions Summary**  
**Hot Oil Heater**  
**Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Location:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.017	0.000	0.02
PM10/PM2.5	7.6	3.3	0.067	0.000	0.07
SO2	0.6	71.0	0.005	0.000	0.01
NOx	100	20.0	0.876	0.000	0.88
VOC	5.5	0.20	0.048	0.000	0.05
CO	84	5.0	0.736	0.000	0.74
<b>Hazardous Air Pollutant</b>					
Arsenic	2.0E-04	5.6E-04	1.8E-06	0.00E+00	1.8E-06
Beryllium	1.2E-05	4.2E-04	1.1E-07	0.00E+00	1.1E-07
Cadmium	1.1E-03	4.2E-04	9.6E-06	0.00E+00	9.6E-06
Chromium	1.4E-03	4.2E-04	1.2E-05	0.00E+00	1.2E-05
Cobalt	8.4E-05		7.4E-07		7.4E-07
Lead	5.0E-04	1.3E-03	4.4E-06	0.00E+00	4.4E-06
Manganese	3.8E-04	8.4E-04	3.3E-06	0.00E+00	3.3E-06
Mercury	2.6E-04	4.2E-04	2.3E-06	0.00E+00	2.3E-06
Nickel	2.1E-03	4.2E-04	1.8E-05	0.00E+00	1.8E-05
Selenium	2.4E-05	2.1E-03	2.1E-07	0.00E+00	2.1E-07
Benzene	2.1E-03		1.8E-05		1.8E-05
Dichlorobenzene	1.2E-03		1.1E-05		1.1E-05
Ethylbenzene					0
Formaldehyde	7.5E-02	6.10E-02	6.6E-04	0.00E+00	0.001
Hexane	1.8E+00		0.02		0.016
Phenol					0
Toluene	3.4E-03		3.0E-05		3.0E-05
Total PAH Haps	negl		negl		0
Polycyclic Organic Matter		3.30E-03		0.00E+00	0.0E+00
<b>Total HAPs =</b>			<b>1.7E-02</b>	<b>0.0E+00</b>	<b>0.017</b>
<b>Worst Single HAP =</b>			<b>1.6E-02</b>	<b>0.0E+00</b>	<b>1.6E-02</b>

**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)] \* [ton/2000 lbs]  
 Sources of AP-42 Emission Factors for fuel combustion:

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

**Abbreviations**

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

**Appendix A.2: Limited Emissions Summary  
Greenhouse Gas (CO2e) Emissions from  
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr  
 Natural Gas Usage = 18 MMCF/yr  
 No. 2 Fuel Oil Usage = 0 gal/yr, 0.00 % sulfur

**Unlimited/Uncontrolled Emissions**

Criteria Pollutant	Emission Factor (units)		Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr)	
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)		Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)
CO2	120,161.84	22,501.41	1	1,052.62	0.00
CH4	2.49	0.91	21	0.022	0.00E+00
N2O	2.20	0.26	310	0.019	0.00E+00
			Total	1,052.66	0.00

<b>Worse Case CO2e Emissions (tons/yr)</b>
<b>1,059.05</b>

CO2e Equivalent Emissions (tons/yr)	1,059.05	0.00
-------------------------------------	----------	------

**Methodology**

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

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

Natural Gas : Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from

No. 2 Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from

Emission Factor (EF) Conversions

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

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

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

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

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

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

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (310).

**Abbreviations**

CH4 = Methane

N2O = Nitrogen Dioxide

CO2 = Carbon Dioxide

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Hot Oil Heating System - Process Emissions**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	2.28E-04	0.000	2.28E-04
CO	8.90E-06	0.0012	0.078	0.000	0.078
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1752.00	0.00	1,752.00
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.28E-04	0.00E+00	2.28E-04
Acenaphthene		5.30E-07		0.00E+00	0.00E+00
Acenaphthylene		2.00E-07		0.00E+00	0.00E+00
Anthracene		1.80E-07		0.00E+00	0.00E+00
Benzo(b)fluoranthene		1.00E-07		0.00E+00	0.00E+00
Fluoranthene		4.40E-08		0.00E+00	0.00E+00
Fluorene		3.20E-08		0.00E+00	0.00E+00
Naphthalene		1.70E-05		0.00E+00	0.00E+00
Phenanthrene		4.90E-06		0.00E+00	0.00E+00
Pyrene		3.20E-08		0.00E+00	0.00E+00

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

**Methodology**

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

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

**Abbreviations**

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

**Appendix A.2: Limited Emissions Summary**  
**Reciprocating Internal Combustion Engines - Diesel Fuel**  
**Output Rating (<=600 HP)**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

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

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

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

**Hazardous Air Pollutants (HAPs)**

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

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

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

<sup>4</sup>Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

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

**Green House Gas Emissions (GHG)**

	Pollutant		
	CO <sub>2</sub> <sup>5</sup>	CH <sub>4</sub> <sup>6</sup>	N <sub>2</sub> O <sup>6</sup>
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22.512.07	0.91	0.18
Limited Emission in tons/yr	0.00	0.000	0.000

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

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

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

<sup>6</sup>Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) \* 2.20462 (lb/kg) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Summed Limited Emissions in tons/yr</b>	<b>0.00</b>
<b>CO<sub>2</sub>e Total in tons/yr</b>	<b>0.00</b>

**Methodology**

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

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

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

CH<sub>4</sub> and N<sub>2</sub>O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

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

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

CO<sub>2</sub>e (tons/yr) = CO<sub>2</sub> Potential Emission ton/yr x CO<sub>2</sub> GWP (1) + CH<sub>4</sub> Potential Emission ton/yr x CH<sub>4</sub> GWP (21) + N<sub>2</sub>O Potential Emission ton/yr x N<sub>2</sub>O GWP (310).

**Appendix A.2: Limited Emissions Summary**  
**Large Reciprocating Internal Combustion Engines - Diesel Fuel**  
**Output Rating (>600 HP)**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

Output Horsepower Rating (hp)	0	Sulfur Content (S) of Fuel (% by weight)	0
Limited Hours Operated per Year	0		
Limited Throughput (hp-hr/yr)	0		
Limited Diesel Fuel Usage (gal/yr)	0		

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

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

<sup>2</sup> Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<sup>3</sup> Emission factor in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

<sup>4</sup> Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

**Hazardous Air Pollutants (HAPs)**

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs <sup>3</sup>
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal <sup>1</sup>	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Limited Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

<sup>3</sup>PAH = Polycyclic Aromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

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

<sup>5</sup> Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

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

**Green House Gas Emissions (GHG)**

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

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

<sup>6</sup> Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) \* 1/7,000 (hp-hr/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

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

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

<sup>7</sup> Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) \* 2.20462 (lb/kg) \* 1/10<sup>6</sup> (MMBtu/Btu) \* 19,300 (Btu/lb) \* 7.1 (lb/gal) \* 1,000 (gal/kgal)

<b>Summed Potential Emissions in tons/yr</b>	<b>0.00</b>
<b>CO2e Total in tons/yr</b>	<b>0.00</b>

**Methodology**

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

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

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

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

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

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Potential Emission ton/yr x N2O GWP (310).

**Appendix A.2: Limited Emissions Summary**  
**Asphalt Load-Out, Silo Filling, and Yard Emissions**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

The following calculations determine the limited fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Annual Asphalt Production Limitation =	1,478,987	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.39	0.43	NA	0.82
Organic PM	3.4E-04	2.5E-04	NA	0.25	0.188	NA	0.44
TOC	0.004	0.012	0.001	3.08	9.01	0.813	12.9
CO	0.001	0.001	3.5E-04	1.00	0.873	0.260	2.13

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

<b>PM/HAPs</b>	<b>0.018</b>	<b>0.021</b>	<b>0</b>	<b>0.039</b>
<b>VOC/HAPs</b>	<b>0.045</b>	<b>0.115</b>	<b>0.012</b>	<b>0.172</b>
<b>non-VOC/HAPs</b>	<b>2.4E-04</b>	<b>2.4E-05</b>	<b>6.3E-05</b>	<b>3.2E-04</b>
<b>non-VOC/non-HAPs</b>	<b>0.22</b>	<b>0.13</b>	<b>0.06</b>	<b>0.41</b>

<b>Total VOCs</b>	<b>2.89</b>	<b>9.01</b>	<b>0.8</b>	<b>12.7</b>
<b>Total HAPs</b>	<b>0.06</b>	<b>0.14</b>	<b>0.012</b>	<b>0.21</b>
<b>Worst Single HAP</b>				<b>0.066</b>
				<b>(formaldehyde)</b>

**Methodology**

The asphalt temperature and volatility factor were provided by the source.

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

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

Total PM/PM10 Ef =  $0.000181 + 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$

Organic PM Ef =  $0.00141(-V)e^{((0.0251)(T+460)-20.43)}$

TOC Ef =  $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$

CO Ef =  $0.00558(-V)e^{((0.0251)(T+460)-20.43)}$

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

PM/PM10 Ef =  $0.000332 + 0.00105(-V)e^{((0.0251)(T+460)-20.43)}$

Organic PM Ef =  $0.00105(-V)e^{((0.0251)(T+460)-20.43)}$

TOC Ef =  $0.0504(-V)e^{((0.0251)(T+460)-20.43)}$

CO Ef =  $0.00488(-V)e^{((0.0251)(T+460)-20.43)}$

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

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

**Abbreviations**

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate

Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

**Appendix A.2: Limited Emissions Summary**  
**Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
<b>PAH HAPs</b>										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	6.6E-04	8.8E-04	NA	1.5E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	7.1E-05	2.6E-05	NA	9.7E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.8E-04	2.4E-04	NA	4.2E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	4.8E-05	1.1E-04	NA	1.5E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.9E-05	0	NA	1.9E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	5.5E-06	0	NA	5.5E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	4.8E-06	0	NA	4.8E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	5.8E-06	0	NA	5.8E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	2.0E-05	1.8E-05	NA	3.8E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	2.6E-04	3.9E-04	NA	6.5E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	9.3E-07	0	NA	9.3E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.3E-04	2.8E-04	NA	4.1E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.9E-03	1.9E-03	NA	3.8E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	1.2E-06	0	NA	1.2E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	6.0E-03	9.9E-03	NA	0.016
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	3.2E-03	3.4E-03	NA	6.6E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	5.5E-05	5.6E-05	NA	1.1E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	2.0E-03	3.4E-03	NA	5.4E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	3.8E-04	8.3E-04	NA	1.2E-03
<b>Total PAH HAPs</b>							<b>0.015</b>	<b>0.021</b>	<b>NA</b>	<b>0.036</b>
<b>Other semi-volatile HAPs</b>										
Phenol		PM/HAP	---	Organic PM	1.18%	0	3.0E-03	0	0	3.0E-03

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

**Methodology**

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] \* [Organic PM (tons/yr)]  
 Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

PM = Particulate Matter  
 HAP = Hazardous Air Pollutant  
 POM = Polycyclic Organic Matter

**Appendix A.2: Limited Emissions Summary**  
**Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**  
**Limited Emissions**

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

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
<b>VOC</b>		VOC	---	TOC	94%	100%	<b>2.89</b>	<b>9.01</b>	<b>0.76</b>	<b>12.67</b>
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	2.0E-01	2.3E-02	5.3E-02	0.276
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	1.4E-03	5.0E-03	3.7E-04	0.007
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	2.2E-02	9.9E-02	5.8E-03	0.127
<b>Total non-VOC/non-HAPS</b>					<b>7.30%</b>	<b>1.40%</b>	<b>0.225</b>	<b>0.126</b>	<b>0.059</b>	<b>0.41</b>
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.6E-03	2.9E-03	4.2E-04	4.9E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	3.0E-04	4.4E-04	7.8E-05	8.1E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	1.5E-03	3.5E-03	4.0E-04	5.4E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	4.0E-04	1.4E-03	1.1E-04	1.9E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	6.5E-06	3.6E-04	1.7E-06	3.7E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	4.6E-04	2.1E-03	1.2E-04	2.7E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	3.4E-03	0	8.9E-04	4.3E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	8.6E-03	3.4E-03	2.3E-03	0.014
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	2.7E-03	6.2E-02	7.2E-04	0.066
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	4.6E-03	9.0E-03	1.2E-03	0.015
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	5.5E-05	2.8E-05	1.5E-05	9.8E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	2.4E-05	0	2.4E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	2.2E-04	4.9E-04	5.9E-05	7.7E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	2.4E-04	0	6.3E-05	3.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	6.5E-03	5.6E-03	1.7E-03	0.014
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	4.0E-05	0	1.1E-05	5.1E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.3E-02	1.8E-02	3.3E-03	0.034
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	2.5E-03	5.1E-03	6.5E-04	8.2E-03
<b>Total volatile organic HAPs</b>					<b>1.50%</b>	<b>1.30%</b>	<b>0.046</b>	<b>0.117</b>	<b>0.012</b>	<b>0.175</b>

**Methodology**

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] \* [TOC (tons/yr)]  
 Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

**Abbreviations**

TOC = Total Organic Compounds  
 HAP = Hazardous Air Pollutant  
 VOC = Volatile Organic Compound  
 MTBE = Methyl tert butyl ether

**Appendix A.2: Limited Emissions Summary  
Material Storage Piles**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.80	0.439	0.154
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.40	0.148	0.052
Gravel	1.6	1.85	1.20	0.406	0.142
Shingles	0.5	0.58	1.50	0.158	0.055
Slag	3.8	4.40	1.00	0.803	0.281
<b>Totals</b>				<b>2.39</b>	<b>0.84</b>

**Methodology**

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) \* (Maximum Pile Size (acres)) \* (ton/2000 lbs) \* (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) \* 35%

\*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

\*\*Maximum anticipated pile size (acres) provided by the source.

PM2.5 = PM10

**Abbreviations**

RAP = recycled asphalt pavement

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary**  
**Material Processing, Handling, Crushing, Screening, and Conveying**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

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

$$E_f = k \cdot (0.0032)^{0.74} \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

where:  $E_f$  = Emission factor (lb/ton)

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

$E_f$  (PM) = 2.27E-03 lb PM/ton of material handled  
 $E_f$  (PM10) = 1.07E-03 lb PM10/ton of material handled  
 $E_f$  (PM2.5) = 1.62E-04 lb PM2.5/ton of material handled

Annual Asphalt Production Limitation = 1,478,987 tons/yr  
 Percent Asphalt Cement/Binder (weight %) = 5.0%  
 Maximum Material Handling Throughput = 1,405,038 tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	1.59	0.75	0.11
Front-end loader dumping of materials into feeder bins	1.59	0.75	0.11
Conveyor dropping material into dryer/mixer or batch tower	1.59	0.75	0.11
<b>Total (tons/yr)</b>	<b>4.78</b>	<b>2.26</b>	<b>0.34</b>

**Methodology**

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

**Material Screening and Conveying (AP-42 Section 19.2.2)**

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 19.2.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	3.79	1.69
Screening	0.025	0.0087	17.56	6.11
Conveying	0.003	0.0011	2.11	0.77
<b>Limited Potential to Emit (tons/yr) =</b>			<b>23.46</b>	<b>8.57</b>

**Methodology**

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] \* [1 - Percent Asphalt Cement/Binder (weight %)]  
 Limited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] \* [Emission Factor (lb/ton)] \* [ton/2000 lbs]  
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)  
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2  
 \*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).  
 \*\*Assumes PM10 = PM2.5

**Abbreviations**

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

**Appendix A.2: Limited Emissions Summary**  
**Unpaved Roads**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

**Unpaved Roads at Industrial Site**

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

Annual Asphalt Production Limitation	=	1,478,987	tons/yr
Percent Asphalt Cement/Binder (weight %)	=	5.0%	
Maximum Material Handling Throughput	=	1,405,038	tons/yr
Maximum Asphalt Cement/Binder Throughput	=	73,949	tons/yr
No. 2 Fuel Oil Limitation	=	1,225,204	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	6.3E+04	2.5E+06	100	0.019	1,188.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	6.3E+04	1.1E+06	100	0.019	1,188.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	2.1E+03	9.9E+04	0	0.000	0.0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.1E+03	2.5E+04	0	0.000	0.0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	1.3E+02	5.7E+03	0	0.000	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.3E+02	1.6E+03	0	0.000	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	3.3E+05	6.4E+06	100	0.019	6,335.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	3.3E+05	5.0E+06	100	0.019	6,335.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	6.2E+04	2.5E+06	0	0.000	0.0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	6.2E+04	1.0E+06	0	0.000	0.0
<b>Total</b>					<b>9.2E+05</b>	<b>1.9E+07</b>			<b>1.5E+04</b>

Average Vehicle Weight Per Trip	=	20.3	tons/trip
Average Miles Per Trip	=	0.016	miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E \cdot [(365 - P)/365]$

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$			
where P =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)	

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, $E_{ext} =$	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	3.62	0.92	0.09	2.38	0.61	0.06	1.19	0.30	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	3.62	0.92	0.09	2.38	0.61	0.06	1.19	0.30	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.000	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.000	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	19.31	4.92	0.49	12.69	3.24	0.32	6.35	1.62	0.16
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	19.31	4.92	0.49	12.69	3.24	0.32	6.35	1.62	0.16
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Totals</b>		<b>45.85</b>	<b>11.69</b>	<b>1.17</b>	<b>30.15</b>	<b>7.68</b>	<b>0.77</b>	<b>15.08</b>	<b>3.84</b>	<b>0.38</b>

**Methodology**

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

**Abbreviations**

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

**Appendix A.2: Limited Emissions Summary**  
**Paved Roads**  
**Limited Emissions**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

**Paved Roads at Industrial Site**

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

Annual Asphalt Production Limitation	1,478,987	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	1,405,038	tons/yr
Maximum Asphalt Cement/Binder Throughput	73,949	tons/yr
No. 2 Fuel Oil Limitation	1,225,204	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	6.3E+04	2.5E+06	700	0.133	8,315.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	6.3E+04	1.1E+06	700	0.133	8,315.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	2.1E+03	9.9E+04	700	0.133	272.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.1E+03	2.5E+04	700	0.133	272.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	1.3E+02	5.7E+03	700	0.133	17.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.3E+02	1.8E+03	700	0.133	17.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	3.3E+05	6.4E+06	700	0.133	44,350.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	3.3E+05	5.0E+06	700	0.133	44,350.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	6.2E+04	2.5E+06	700	0.133	8,169.9
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	6.2E+04	1.0E+06	700	0.133	8,169.9
<b>Total</b>					<b>9.2E+05</b>	<b>1.9E+07</b>			<b>1.2E+05</b>

Average Vehicle Weight Per Trip = 20.3 tons/trip  
 Average Miles Per Trip = 0.133 miles/trip

Unmitigated Emission Factor,  $E_f = k \cdot (sL)^{0.91} \cdot (W)^{1.02}$  (Equation 1 from AP-42 13.2.1)

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

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E \cdot [1 - (p/4N)]$

Mitigated Emission Factor,  $E_{ext} = E_f \cdot [1 - (p/4N)]$   
 where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
 N = 365 days per year

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

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.62	0.12	0.03	0.57	0.11	0.03	0.28	0.06	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.62	0.12	0.03	0.57	0.11	0.03	0.28	0.06	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.020	0.004	9.9E-04	0.019	0.004	9.1E-04	0.009	1.9E-03	4.5E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.020	0.004	9.9E-04	0.019	0.004	9.1E-04	0.009	1.9E-03	4.5E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.3E-03	2.6E-04	6.3E-05	1.2E-03	2.3E-04	5.7E-05	5.8E-04	1.2E-04	2.9E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.3E-03	2.6E-04	6.3E-05	1.2E-03	2.3E-04	5.7E-05	5.8E-04	1.2E-04	2.9E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	3.30	0.66	0.16	3.02	0.60	0.15	1.51	0.30	0.07
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	3.30	0.66	0.16	3.02	0.60	0.15	1.51	0.30	0.07
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.61	0.12	0.03	0.56	0.11	0.03	0.28	0.06	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.61	0.12	0.03	0.56	0.11	0.03	0.28	0.06	0.01
<b>Totals</b>		<b>9.09</b>	<b>1.82</b>	<b>0.45</b>	<b>8.31</b>	<b>1.66</b>	<b>0.41</b>	<b>4.16</b>	<b>0.83</b>	<b>0.20</b>

**Methodology**

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

**Abbreviations**

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

**Appendix A.2: Limited Emissions Summary  
Cold Mix Asphalt Production and Stockpiles**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

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

Limited VOC Emissions from the Sum of the Liquid Binders = 62.62 tons/yr

**Volatile Organic Compounds**

	Maximum weight % of VOC solvent in binder	Weight % VOC solvent in binder that evaporates	VOC Solvent Usage Limitation (tons/yr)	Limited PTE of VOC (tons/yr)	Liquid Binder Adjustment Ratio
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	65.92	62.62	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	89.46	62.62	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	250.49	62.62	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	134.96	62.62	2.155
Other asphalt with solvent binder	25.9%	2.5%	2,504.90	62.62	40.0
<b>Worst Case Limited PTE of VOC =</b>				<b>62.62</b>	

**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
<b>Limited PTE of Total HAPs (tons/yr) =</b>	<b>16.33</b>
<b>Limited PTE of Single HAP (tons/yr) =</b>	<b>5.64 Xylenes</b>

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

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

**Methodology**

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

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

**Abbreviations**

VOC = Volatile Organic Compounds  
 PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary  
Gasoline Fuel Transfer and Dispensing Operation**

**Company Name:** Corydon Stone & Asphalt Co.  
**Source Address:** 1100 Quarry Road NW, Corydon, IN 47112  
**Administrative Amendment:** 061-32439-05308  
**Reviewer:** Adam Wheat

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.

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

$$\begin{aligned} \text{Gasoline Throughput} &= 0 \text{ gallons/day} \\ &= 0.0 \text{ kgal/yr} \end{aligned}$$

**Volatile Organic Compounds**

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

**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
<b>Limited PTE of Total HAPs (tons/yr) =</b>	<b>0.00</b>
<b>Limited PTE of Single HAP (tons/yr) =</b>	<b>0.00 Xylenes</b>

**Methodology**

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] \* [365 days/yr] \* [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] \* [Emission Factor (lb/kgal)] \* [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] \* [PTE of VOC (tons/yr)]

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

**Abbreviations**

VOC = Volatile Organic Compounds

PTE = Potential to Emit



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
**Governor**

*Thomas W. Easterly*  
**Commissioner**

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

## **SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED**

**TO:** Mr. Stephen A. Walker  
Corydon Stone & Asphalt Company  
POB D  
Sellersburg, IN 47172

**DATE:** December 12, 2012

**FROM:** Matt Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

**SUBJECT:** Final Decision  
FESOP  
061-32439-05308

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:  
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at [jbrush@idem.IN.gov](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07

# Mail Code 61-53

IDEM Staff	CDENNY 12/12/2012 Corydon Stone & Asphalt Company 061-32439-05308 (final)		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Steve Walker Corydon Stone & Asphalt Company PO Box D Sellersburg IN 47172 (Source CAATS)										
2		Kenneth B Rush VP Corydon Stone & Asphalt Company PO Box D Sellersburg IN 47172 (RO CAATS)										
3		Harrison County Commissioners 300 North Capital Corydon IN 47112 (Local Official)										
4		Harrison County Health Department 241 Atwood Street Ste#105 Corydon IN 47112-1882 (Health Department)										
5		Mr. Robert Bottom Paddlewheel Alliance P.O. Box 35531 Louisville KY 40232-5531 (Affected Party)										
6		Corydon Town Council 113 N. Oak St. Corydon IN 47112 (Local Official)										
7												
8												
9												
10												
11												
12												
13												
14												
15												

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See <b>Domestic Mail Manual R900, S913, and S921</b> for limitations of coverage on inured and COD mail. See <b>International Mail Manual</b> for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
---	--	--	--