



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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

Michael R. Pence  
Governor

Thomas W. Easterly  
Commissioner

TO: Interested Parties / Applicant

DATE: November 14, 2013

RE: Owens Corning Roofing & Asphalt, LLC / 047-33628-00005

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.dot 6/13/2013



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Mr. Larry Cavins  
Owens Corning Roofing & Asphalt, LLC  
128 West Eighth Street  
Brookville, Indiana 47012

November 14, 2013

Re: AA047-33628-00005  
Administrative Amendment to  
FESOP F047-24313-00005

Dear Mr. Cavins:

Owens Corning Roofing & Asphalt, LLC was issued a Federally Enforceable State Operating Permit (FESOP) Renewal No. F047-24313-00005 on February 11, 2008 for a stationary asphalt felt, coatings, and roofing products manufacturing source located at 128 West Eighth Street, Brookville, Indiana. On September 10, 2013, the Office of Air Quality (OAQ) received an application from the source requesting to add an insignificant activity, a finishing layer application process for roofing products.

Pursuant to the provisions of 326 IAC 2-7-11(a), the permit is hereby administratively amended as described in the attached Technical Support Document.

All other conditions of the permit shall remain unchanged and in effect. Please find attached the entire Part 70 Operating Permit as modified.

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 Doug Logan of my staff, at 317-234-5328 or 1-800-451-6027, and ask for extension 4-5328.

Sincerely,

Jenny Acker, Section Chief  
Permits Branch  
Office of Air Quality

Attachment(s): Updated Permit, Technical Support Document

JLA/dal

cc: File - Franklin County  
Franklin County Health Department  
U.S. EPA, Region V  
Compliance and Enforcement Branch  
Billing, Licensing and Training Section  
Southeast Regional Office



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# Federally Enforceable State Operating Permit Renewal OFFICE OF AIR QUALITY


**Owens Corning Roofing & Asphalt, LLC**  
**128 W. Eighth Street**  
**Brookville, Indiana 47012**

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

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

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

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

Operation Permit No.: F047-24313-00005	
Original document signed by: Chrystal Wagner, Section Chief Permits Branch Office of Air Quality	Issuance Date: February 11, 2008  Expiration Date: February 11, 2018
Administrative Amendment No.: 047-26894-00005, issued on October 16, 2008 Administrative Amendment No.: 047-28905-00005, issued on February 16, 2010 Minor Permit Revision No.: 047-30402-00005, issued on April 25, 2011 Administrative Amendment No.: 047-32491-00005, issued on January 3, 2013 Significant Permit Revision No.: 047-32917-00005, issued on August, 30, 2013	
Administrative Amendment No.: 047-33628-00005	
Issued by:  Jenny Acker, Section Chief Permits Branch Office of Air Quality	Issuance Date: November 14, 2013  Expiration Date: February 11, 2018



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## TABLE OF CONTENTS

<b>A. SOURCE SUMMARY.....</b>	<b>6</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 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]	
A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]	
A.5 FESOP Applicability [326 IAC 2-8-2]	
<b>B. GENERAL CONDITIONS .....</b>	<b>12</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)] [326 IAC 2-8-5(a)(1)]	
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>22</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 Stack Height [326 IAC 1-7]	
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 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]
- C.14 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]
- C.15 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.16 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]
- C.17 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

**Stratospheric Ozone Protection**

- C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

**SECTION D.1 FACILITY OPERATION CONDITIONS**

**Four (4) Fuel Combustion Emission Units (EU), EU 1.1, EU 1.2, EU 1.3 & EU 1.4 ..... 29**

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

- D.1.1 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-3]  
[326 IAC 6-2-4]

**SECTION D.2 FACILITY OPERATION CONDITIONS**

**Four (4) Liquid Storage Tanks, EU 2.1, EU 2.2, EU 2.3 & EU 3.1..... 30**

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

- D.2.1 Volatile Organic Compounds (VOC) and Particulate (PM, PM10, and PM2.5) Emission  
Limitations [326 IAC 2-8-4] [326 IAC 2-2]
- D.2.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]
- D.2.3 Particulate [326 IAC 6-3]

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

- D.2.4 Visible Emissions Notations
- D.2.5 Parametric Monitoring
- D.2.6 Broken or Failed Filter Detection

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

- D.2.7 Record Keeping Requirements
- D.2.8 Reporting Requirements

**SECTION D.3 FACILITY OPERATION CONDITIONS**

**Mineral Storage Facilities Utilizing Pneumatic Conveying and Facilities with a Common  
Production Rate Limit, EU 4.9, EU 6.1, EU 7.1, EU 7.2 & ID #93..... 34**

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

- D.3.1 Particulate [326 IAC 6-3]
- D.3.2 Particulate (PM, PM10, and PM2.5) Emission Limitations [326 IAC 2-8-4][326 IAC 2-2]
- D.3.3 Volatile Organic Compounds (VOC) and Particulate (PM, PM10, and PM2.5) Emission Limits  
[326 IAC 2-8-4(1)] [326 IAC 2-2]
- D.3.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

**Compliance Determination Requirements**

D.3.5 Particulate Control

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

D.3.6 Visible Emissions Notations

D.3.7 Parametric Monitoring

D.3.8 Broken or Failed Filter and Bag Detection

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

D.3.9 Record Keeping Requirements

D.3.10 Reporting Requirements

**SECTION D.4 FACILITY OPERATION CONDITIONS**

**Asphalt Filler Mixer, EU 5.1 ..... 41**

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

D.4.1 Volatile Organic Compounds (VOC) and Particulate (PM, PM10, and PM2.5) Emission Limits  
[326 IAC 2-8-4][326 IAC 2-2][40 CFR 52.21]

**Compliance Determination Requirements**

D.4.2 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

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

D.4.3 Record Keeping Requirements

D.4.4 Reporting Requirements

**SECTION D.5 FACILITY OPERATION CONDITIONS**

**Insignificant Activities ..... 42**

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

D.5.1 Particulate [326 IAC 6-2-4]

D.5.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

D.5.3 Volatile Organic Compounds (VOC) [326 IAC 8-3-8]

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

D.5.4 Record Keeping Requirements

**SECTION E.1 FACILITY OPERATION CONDITIONS**

**NESHAP AAAAAAA ..... 44**

**National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements**

E.1.1 General Provisions Relating to NESHAP [326 IAC 20-1][40 CFR Part 63, Subpart A]

E.1.2 NESHAP for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing  
[40 CFR Part 63, Subpart AAAAAAA]

E.1.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [40 CFR 63.11562]

**SECTION E.2 FACILITY OPERATION CONDITIONS**

**NSPS UU..... 46**

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

E.2.1 General Provisions Relating to NSPS, Subpart UU [326 IAC 12-1] [40 CFR 60, Subpart A]

E.2.2 New Source Performance Standards for Asphalt Processing and Asphalt Roofing  
Manufacture

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

<b>Certification Form .....</b>	<b>49</b>
<b>Emergency Occurrence Form.....</b>	<b>50</b>
<b>FESOP Usage Report Form(s) .....</b>	<b>52</b>
<b>Quarterly Deviation and Compliance Monitoring Report Form.....</b>	<b>55</b>

Attachment A: 40 CFR 63, Subpart AAAAAAA - National Emission Standards for Hazardous Air  
Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing

Attachment B: 40 CFR 60, Subpart UU - Standards of Performance for Asphalt Processing and Asphalt  
Roofing Manufacture

## 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 asphalt felt, coatings, and roofing products manufacturing source.

Source Address:	128 W. Eighth Street, Brookville, Indiana 47012
General Source Phone Number:	(765) 647-4131
SIC Code:	2952 (Asphalt Felts and Coatings)
County Location:	Franklin
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) Five (5) fuel combustion emission units (EU) consisting of:

- (1) one (1) natural gas fired asphalt preheater #1 identified as EU 1.1, installed in 1991, rated at 2.5 million British thermal units (MMBtu) per hour and using No.2 fuel oil as a backup, exhausting at one (1) stack identified as 65;
- (2) one (1) natural gas fired asphalt preheater #2 (asphalt saturant preheater) identified as EU 1.2, installed in 1996, rated at 2.5 MMBtu per hour and using No.2 fuel oil as a backup, exhausting at one (1) stack identified as 66;
- (3) one (1) natural gas fired filler heater (asphalt saturant preheater) identified as EU 1.3, installed in 1979, rated at 2.5 MMBtu per hour and using No.2 fuel oil as a backup, exhausting at one (1) stack identified as 15;
- (4) one (1) natural gas fired hot oil heater identified as EU 1.4, installed in 1982, rated at 2.1 MMBtu per hour and using No. 2 fuel oil as a backup, exhausting at one (1) stack identified as 67; and
- (5) one (1) natural gas fired hot oil heater identified as EU-NOH, installed in 2006, rated at 1.60 MMBtu per hour, and exhausting at one (1) stack identified as S-NOH.

(b) Three (3) liquid storage tanks, consisting of:

- (1) one (1) 40,000 gallon capacity asphalt tank #1 identified as EU 2.1, installed in 1990, rated at 200 gallons per minute, with a fiber filter bed to control particulate matter, exhausting at one (1) stack identified as 71;



- (2) one (1) 10,000 gallon capacity adhesive tank #7 identified as EU 2.2, placed into service during or after 2002, rated at 200 gallons per minute, with particulate matter controlled by fiber bed filter, exhausting to one (1) stack identified as S101;
- (3) one (1) 15,000 gallon capacity adhesive tank #7A identified as EU 2.3, approved in 2010 for installation, rated at 200 gallons per minute, with particulate matter controlled by fiber bed filter, exhausting to one (1) stack identified as S102.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], the asphalt storage tank EU 2.1 is considered an affected facility.

- (c) Mineral storage facilities utilizing pneumatic conveying and controlled by baghouses, consisting of:
- (1) one (1) filler silo #1 identified as EU 4.1, installed in 1979, rated at 64.2 thousand cubic feet per hour, with particulate matter controlled by two (2) baghouses utilizing 'Smartimers' for controlling cleaning cycle frequency, each exhausting at one (1) individual stack identified as 74 and 75;
  - (2) one (1) filler silo #2 identified as EU 4.2, installed in 1991, rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 77;
  - (3) one (1) filler silo #4 identified as EU 4.3, modified in 2008, rated at 64.2 thousand cubic feet per hour, with particulate matter controlled by two (2) baghouses utilizing 'Smartimers' for controlling cleaning cycle frequency, with each exhausting at one (1) individual stack identified as 80 and 81;
  - (4) one (1) filler silo #3 identified as EU 4.6, installed in 2008, rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 82;
  - (5) one (1) parting agent silo #5, identified as EU 4.4, modified in 2008, storage capacity of 150 tons of sand, process weight rate of 2.2 tons per hour, exhaust gas flow rate rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting to stack identified as S79;
  - (6) one (1) parting agent use bin identified as EU 4.5, installed in 1991, rated at 27 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse common to this facility, EU4.11, and EU 7.1, with the baghouse equipped with 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 14;
  - (7) one (1) filler upper surge hopper identified as EU 4.7, installed in 1979, rated at 54 thousand cubic feet per hour, with particulate matter controlled by two (2) baghouses utilizing 'Smartimers' for controlling cleaning cycle frequency, with each exhausting at one (1) individual stack identified as 15A and 15B;

- (8) one (1) filler lower surge hopper identified as EU 4.8, installed in 1979, rated at 27 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 15C;
- (9) one (1) filler hopper identified as EU-NFH, installed in 2006, rated at 35 cubic feet per hour, equipped with bin vent filter for particulate matter control, utilizing 'Smartimers' for controlling cleaning cycle frequency, and exhausting at one (1) stack identified as S-NFH;
- (10) one (1) surfacing material silo #7 identified as EU 4.10, installed in 1996, rated at 30 thousand cubic feet per hour, with particulate matter controlled by one (1) cartridge dust collector identified as C-4.10 exhausting at one (1) stack identified as S83.; and
- (11) one (1) surfacing material receiving bin rated at 30 thousand cubic feet per hour and identified as EU 4.11, installed in 1996, with particulate matter controlled by one (1) baghouse common to this facility, EU 4.5, and EU 7.1, with the baghouse equipped with 'Smartimers' for controlling cleaning cycle frequency, all exhausting at one (1) stack identified as 14.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], mineral storage facilities (EU 4.6, EU 4.2 through EU 4.5, EU 4.10, and EU 4.11) are considered affected facilities.

- (d) One (1) asphalt filler mixer identified as EU 5.1, rated at 300 gallons per minute, utilizing a screw conveyor for mineral filling and gravity flow for tank emptying, as an enclosed facility without an exhaust stack.

Under 40 CFR 63, Subpart AAAAAA, the asphalt filler mixer (EU 5.1) is considered an affected facility.

- (e) Five (5) facilities with a common production rate limit, consisting of:
  - (1) six (6) surfacing material silos #1 - #6 collectively identified as EU 4.9, installed after November 1980, with particulate matter controlled by one (1) baghouse identified as C-4.9 utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as S100;
  - (2) one (1) asphalt coater (coating rolls) and coating surge tank identified as EU 6.1, installed in 2006, with particulate matter controlled by one (1) fiber bed filter, exhausting at one (1) stack identified as 36;
  - (3) one (1) material surfacing applicator (material surfacing area) identified as EU 7.1, rated at 471 thousand cubic feet per hour with particulate matter controlled by one (1) baghouse common to this facility, EU 4.5, and EU 4.11, with the baghouse equipped with 'Smartimers' for controlling cleaning cycle frequency, all exhausting at one (1) stack identified as 14;
  - (4) one (1) cooling section identified as EU 7.2, installed in 2006, exhausting at two (2) stacks identified as 41 and 42; and
  - (5) fugitive emissions building ventilators, identified as ID# 93, including a fiber bed filter installed in 2011, to replace the Smog Hog that was installed in 2008, exhausting at one (1) stack identified as S37.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], the surfacing material silos #1 - #6 (EU 4.9) and the asphalt coater and coating surge tank (EU 6.1) are considered affected facilities.

Under 40 CFR 63, Subpart AAAAAA, the asphalt coater and coating surge tank (EU 6.1) is considered an affected facility.

A.3 Specifically Regulated 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) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British Thermal Units per hour. This includes one (1) 0.58 Million British Thermal Units per hour rated furnace, sixteen (16) 0.075 Million British Thermal Units per hour individually rated furnaces, and one (1) 0.25 Million British Thermal Units per hour rated boiler installed after 1983. [326 IAC 6-2-4]
- (b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, including two cold cleaning parts washers installed in 2000. [326 IAC 8-3-2]

A.4 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) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) British Thermal Units per hour.
- (b) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 British Thermal Units per hour, except where total capacity of equipment operated by one stationary source exceeds 2,000,000 British Thermal Units per hour.
- (c) Combustion source flame safety purging on startup.
- (d) The following VOC and HAP storage containers:
  - (1) storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons;
  - (2) vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (e) Machining where an aqueous cutting coolant continuously floods the machining interface.
- (f) Cleaners and solvents characterized as follows:
  - (1) having a vapor pressure equal to or less than 2 kilopascal (kPa); 15 millimeter of mercury; or 0.3 pounds per square inch measured at 38 degrees C (100 °F) or;
  - (2) having a vapor pressure equal to or less than 0.7 kilopascal (kPa); 5 millimeter of mercury; or 0.1 pounds per square inch measured at 20 °C (68 °F);

the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.

- (g) The following equipment related to manufacturing activities not resulting in the emission of hazardous air pollutants (HAPs); brazing equipment, cutting torches, soldering equipment, welding equipment, including the total use of less than 625 pounds of welding consumables per day and less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness of less is cut.
- (h) Closed loop heating and cooling systems.
- (i) Noncontact cooling tower systems with forced and induced draft not regulated under NESHAP.
- (j) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
- (k) Process vessel degassing and cleaning to prepare for internal repairs.
- (l) Paved and unpaved roads and parking lots with public access, identified as ID# 91.
- (m) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (n) On-site fire and emergency response training approved by the department.
- (o) A laboratory as defined in 326 IAC 2-7-1(21)(D).
- (p) Additional activities and categories with PM/PM10 emissions below the insignificant thresholds of five (5) pounds per hour or twenty-five (25) pounds per day and VOC emissions below three (3) pounds per hour or fifteen (15) pounds per day:
  - (1) one (1) granule and sand reclaim system, identified as EU 6.2, with a maximum capacity of 4 tons of granules and sand per day, exhausting through one stack identified as 71A. The potential emissions from this activity are calculated to be 0.0136 pounds per day;
  - (2) one (1) parting agent recycle system rated at 27 thousand cubic feet per hour and identified as EU 4.4R;
  - (3) VOC emissions from pumps, valves, flanges, etc., identified as ID# 92;
  - (4) fugitive particulate matter emissions from material unloading, identified as ID# 94;
  - (5) ink jet printer;
  - (6) application of adhesive to asphalt coated product, using up to one (1) ton per hour adhesive, including:
    - (A) adhesive use tank #1;
    - (B) adhesive melt tank #1;
    - (C) adhesive melt tank #2;
    - (D) adhesive use tank #2;
    - (E) laminating adhesive use tank;
    - (F) laminating adhesive melt tank;

- (G) adhesive applicator pan; and
- (H) laminating adhesive applicator pan.
- (7) one (1) 180 gallon capacity adhesive mix tank identified as EU-NMT, installed in 2006, with particulate matter controlled by fiber bed filter, and exhausting to one stack identified as S-NMT; and
- (8) one (1) 545 gallon capacity Straco tank, installed in 2006, and used for re-circulating hot oil around coating surge tank for heating.
- (q) A Finishing Layer Application process, permitted in 2013, including the following
  - (1) Two (2) 100-gallon raw material storage tanks
  - (2) 150 gallon mixing tank,
  - (3) 200 gallon holding tank,
  - (4) Four (4) pumps,
  - (5) Twelve (12) application nozzles, and
  - (6) Associated piping.

A.5 FESOP Applicability [326 IAC 2-8-2]

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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, F047-24313-00005, 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)]**

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- (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)]**

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- (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)]**

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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)]**

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(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]**

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- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, or Southeast Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

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

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

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

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

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

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

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

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

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

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

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- (a) All terms and conditions of permits established prior to F047-24313-00005 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)]**

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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]**

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- (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)]**

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- (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]**

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- (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]**

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- (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]**

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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]**

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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]**

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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 one hundred (100) tons per twelve (12) consecutive month period.

###### (c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

###### (d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

##### C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (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]

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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]

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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]

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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 Stack Height [326 IAC 1-7]

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

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

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- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
  - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
  - (2) If there is a change in the following:
    - (A) Asbestos removal or demolition start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

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

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

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

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

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

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- (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]**

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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)]**

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(a) For new units:

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

(b) For existing units:

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

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

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

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

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

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

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

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

#### **C.13 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]**

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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.14 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]**

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

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

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

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

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

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

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

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

#### **C.17 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]**

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- (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.18 Compliance with 40 CFR 82 and 326 IAC 22-1**

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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

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

- (a) Five (5) fuel combustion emission units (EU) consisting of:
- (1) one (1) natural gas fired asphalt preheater #1 identified as EU 1.1, installed in 1991, rated at 2.5 million British thermal units (MMBtu) per hour and using No.2 fuel oil as a backup, exhausting at one (1) stack identified as 65;
  - (2) one (1) natural gas fired asphalt preheater #2 (asphalt saturant preheater) identified as EU 1.2, installed in 1996, rated at 2.5 MMBtu per hour and using No.2 fuel oil as a backup, exhausting at one (1) stack identified as 66;
  - (3) one (1) natural gas fired filler heater (asphalt saturant preheater) identified as EU 1.3, installed in 1979, rated at 2.5 MMBtu per hour and using No.2 fuel oil as a backup, exhausting at one (1) stack identified as 15;
  - (4) one (1) natural gas fired hot oil heater identified as EU 1.4, installed in 1982, rated at 2.1 MMBtu per hour and using No. 2 fuel oil as a backup, exhausting at one (1) stack identified as 67; and
  - (5) one (1) natural gas fired hot oil heater identified as EU-NOH, installed in 2006, rated at 1.60 MMBtu per hour, and exhausting at one (1) stack identified as S-NOH.

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

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

#### D.1.1 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-3] [326 IAC 6-2-4]

- (a) Pursuant to 326 IAC 6-2-3(d), PM emissions from the hot oil heater (EU 1.4) rated at 2.1 MMBtu/hr, which began operation after June 8, 1972, shall be limited to 0.6 pounds of particulate matter per million British thermal units heat input.
- (b) Pursuant to 326 IAC 6-2-4(a) (Particulate Matter Emission Limitations for Sources of Indirect Heating), PM emissions from the hot oil heater (EU-NOH), which began operation after September 21, 1983, shall be limited to 0.6 pounds per MMBtu heat input.

## SECTION D.2

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

(b) Three (3) liquid storage tanks, consisting of:

- (1) one (1) 40,000 gallon capacity asphalt tank #1 identified as EU 2.1, installed in 1990, rated at 200 gallons per minute, with a fiber filter bed to control particulate matter, exhausting at one (1) stack identified as 71;
- (2) one (1) 10,000 gallon capacity adhesive tank #7 identified as EU 2.2, placed into service during or after 2002, rated at 200 gallons per minute, with particulate matter controlled by fiber bed filter, exhausting to one (1) stack identified as S101;
- (3) one (1) 15,000 gallon capacity adhesive tank #7A identified as EU 2.3, approved in 2010 for installation, rated at 200 gallons per minute, with particulate matter controlled by fiber bed filter, exhausting to one (1) stack identified as S102.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], asphalt storage tank EU 2.1 is considered an affected facility.

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

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

#### D.2.1 Volatile Organic Compounds (VOC) and Particulate (PM, PM10, and PM2.5) Emission Limitations [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The total throughput to asphalt tank #1 (EU 2.1) shall not exceed 28,502,400 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The throughput to each of adhesive tanks #7 (EU 2.2) and #7A (EU 2.3) shall not exceed 1,295,640 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the PM, PM10, PM2.5, and VOC emission limits in Conditions D.3.2, D.3.3, and D.4.1 and with the potential to emit from other units at the source, shall limit the source-wide total potential to emit of PM, PM10, PM2.5, and VOC to less than one hundred (100) tons per twelve (12) consecutive month period, each. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

#### D.2.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for facilities EU 2.1, EU 2.2, and EU 2.3 and the relevant control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.



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

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the following facilities shall be limited as follows:

Emission Unit/Activity	Process Weight Rate (tons/hr)	Allowable Emissions (326 IAC 6-3-2) (lb/hr)
Asphalt Storage Tank (EU 2.1)	30.79	40.18

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:

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

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

##### D.2.4 Visible Emissions Notations

- Visible emission notations of EU 2.1 fiber bed filter stack exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- 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.
- 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.
- 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.
- If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

##### D.2.5 Parametric Monitoring

The Permittee shall record the pressure drop across the fiber bed filter for EU 2.1 at least once per day when each storage tank is in operation. When, for any one reading, the pressure drop across any of the fiber bed filters is outside the normal range, the Permittee shall take a reasonable response. The normal range for these units is a pressure drop between 0.25 and 10 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

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

#### D.2.6 Broken or Failed Filter Detection

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

Fiber bed filter 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 Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]**

##### D.2.7 Record Keeping Requirements

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- (a) To document the compliance status with Condition D.2.1, the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken monthly and shall be complete and sufficient to establish compliance with the emission limits established in Condition D.2.3:
  - (1) Calendar dates covered in the compliance determination period;
  - (2) Total throughput to asphalt tank #1 (EU 2.1) per month since the last compliance determination period; and
  - (3) The throughput to each of adhesive tanks #7 (EU 2.2) and #7A (EU 2.3) per month since the last compliance determination period.
- (b) To document the compliance status with Condition D.2.5, the Permittee shall maintain records of daily visible emission notations of the EU 2.1 fiber bed filter stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (e.g., the process did not operate that day).
- (c) To document the compliance status with Condition D.2.6, the Permittee shall maintain records once per day of the pressure drop across the fiber bed filter controlling EU 2.1. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g., the process did not operate that day).
- (d) Section C - General Record Keeping Requirements, of this permit contains the Permittee's obligations with regard to the records required by this condition.

##### D.2.8 Reporting Requirements

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A quarterly summary of the information to document the compliance status with Condition D.2.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that

meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.3

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

- (c) Mineral storage facilities utilizing pneumatic conveying and controlled by baghouses, consisting of:
- (1) one (1) filler silo #1 identified as EU 4.1, installed in 1979, rated at 64.2 thousand cubic feet per hour, with particulate matter controlled by two (2) baghouses utilizing Smartimers for controlling cleaning cycle frequency, each exhausting at one (1) individual stack identified as 74 and 75;
  - (2) one (1) filler silo #2 identified as EU 4.2, installed in 1991, rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing Smartimers for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 77;
  - (3) one (1) filler silo #4 identified as EU 4.3, modified in 2008, rated at 64.2 thousand cubic feet per hour, with particulate matter controlled by two (2) baghouses utilizing 'Smartimers' for controlling cleaning cycle frequency, with each exhausting at one (1) individual stack identified as 80 and 81;
  - (4) one (1) filler silo #3 identified as EU 4.6, installed in 2008, rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 82;
  - (5) one (1) parting agent silo #5, identified as EU 4.4, modified in 2008, storage capacity of 150 tons of sand, process weight rate of 2.2 tons per hour, exhaust gas flow rate rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting to stack identified as S79;
  - (6) one (1) parting agent use bin identified as EU 4.5, installed in 1991, rated at 27 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse common to this facility, EU4.11, and EU 7.1, with the baghouse equipped with Smartimers for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 14;
  - (7) one (1) filler upper surge hopper identified as EU 4.7, installed in 1979, rated at 54 thousand cubic feet per hour, with particulate matter controlled by two (2) baghouses utilizing Smartimers for controlling cleaning cycle frequency, with each exhausting at one (1) individual stack identified as 15A and 15B;
  - (8) one (1) filler lower surge hopper identified as EU 4.8, installed in 1979, rated at 27 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing Smartimers for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 15C;
  - (9) one (1) filler hopper identified as EU-NFH, installed in 2006, rated at 35 cubic feet per hour, equipped with bin vent filter for particulate matter control, utilizing 'Smartimers' for controlling cleaning cycle frequency, and exhausting at one (1) stack identified as S-NFH;
  - (10) one (1) surfacing material silo #7 identified as EU 4.10, installed in 1996, rated at 30

thousand cubic feet per hour, with particulate matter controlled by one (1) cartridge dust collector identified as C-4.10 exhausting at one (1) stack identified as S83.; and

- (11) one (1) surfacing material receiving bin rated at 30 thousand cubic feet per hour and identified as EU 4.11, installed in 1996, with particulate matter controlled by one (1) baghouse common to this facility, EU 4.5, and EU 7.1, with the baghouse equipped with Smartimers for controlling cleaning cycle frequency, all exhausting at one (1) stack identified as 14.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], mineral storage facilities (EU 4.6, EU 4.2 through EU 4.5, EU 4.10, and EU 4.11) are considered affected facilities.

- (e) Five (5) facilities with a common production rate limit, consisting of:

- (1) six (6) surfacing material silos #1 - #6 collectively identified as EU 4.9, installed after November 1980, with particulate matter controlled by one (1) baghouse identified as C-4.9, utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as S100;
- (2) one (1) asphalt coater (coating rolls) and coating surge tank identified as EU 6.1, installed in 2006, with particulate matter controlled by one (1) fiber bed filter, exhausting at one (1) stack identified as 36;
- (3) one (1) material surfacing applicator (material surfacing area) identified as EU 7.1, rated at 471 thousand cubic feet per hour with particulate matter controlled by one (1) baghouse common to this facility, EU 4.5, and EU 4.11, with the baghouse equipped with Smartimers for controlling cleaning cycle frequency, all exhausting at one (1) stack identified as 14;
- (4) one (1) cooling section identified as EU 7.2, installed in 2006, exhausting at two (2) stacks identified as 41 and 42; and
- (5) fugitive emissions building ventilators, identified as ID# 93, including a fiber bed filter installed in 2011, to replace the Smog Hog that was installed in 2008, exhausting at one (1) stack identified as S37.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], the surfacing material silos #1 - #6 (EU 4.9) and the asphalt coater and coating surge tank (EU 6.1) are considered affected facilities.

Under 40 CFR 63, Subpart AAAAAAA, the asphalt coater and coating surge tank (EU 6.1) is considered an affected facility.

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

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

#### **D.3.1 Particulate [326 IAC 6-3]**

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the following facilities shall be limited as follows:

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:

$$E = 55.0 P^{0.11} - 40$$

where E = rate of emission in pounds per hour and  
 P = process weight rate in tons per hour

and

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

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and  
 P = process weight rate in tons per hour.

Emission Unit/Activity	Process Weight Rate (tons/hr)	Allowable Emissions (326 IAC 6-3-2) (lb/hr)
Filler Silo #1 (EU 4.1)	22.5	33.02
Filler Silo #2 (EU 4.2)	22.5	33.02
Filler Silo #4 (EU 4.3)	30	40.03
Parting Agent Silo #5 (EU 4.4)	2.2	6.95
Filler Silo #3 (EU 4.6)	22.5	33.02
Filler Upper Surge Hopper (EU 4.7)	22.5	33.02
Filler Lower Surge Hopper (EU 4.8)	22.5	33.02
Surfacing Material Silos #1 through #6 (EU 4.9)	17.2	27.58
Surfacing Material Silo #7 (EU 4.10)	17.2	27.58
Parting Agent Use Bin #1 (EU 4.5), Surfacing Material Receiving Bin (EU 4.11), and Surfacing Material Applicator (EU 7.1)	55.2	45.50
Filler Receiving Hopper Bin Vent Filer (EU NFH)	0.2	1.44
Asphalt Coater / Surge tank (EU 6.1)	35.8	41.52
Cooling Section (EU 7.2)	55.2	45.50

#### D.3.2 Particulate (PM, PM10, and PM2.5) Emission Limitations [326 IAC 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) not applicable, the PM, PM10, and PM2.5 emissions from EU 4.1 through EU 4.11, EU 7.1, and EU NFH shall not exceed the emission limits in the following table:

Emission Unit/Activity	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)
Filler Silo #1 (EU 4.1)	0.22	0.22	0.22
Filler Silo #2 (EU 4.2)	0.11	0.11	0.11
Filler Solo #4 (EU 4.3)	0.22	0.22	0.22
Parting Agen Silo #5 (EU 4.4)	0.11	0.11	0.11
Filler Silo #3 (EU 4.6)	0.11	0.11	0.11
Filler Upper Surge Hopper (EU 4.7)	0.19	0.19	0.19
Filler Lower Surge Hopper (EU 4.8)	0.09	0.09	0.09
Surfacing Material Silos #1-#6 (EU 4.9)	2.64	2.64	2.64
Surfacing Material Silo #7 (EU 4.10)	0.41	0.41	0.41
Parting Agent Use Bin #1 (EU 4.5), Surfacing Material Receiving Bin (EU 4.11), and Surfacing Material Applicator (EU 7.1)	1.61	1.61	1.61
Filler Receiving Hopper Bin Vent Filter (EU NFH)	0.05	0.05	0.05

Compliance with these limits, combined with the PM, PM10, and PM2.5 limits in Conditions D.2.1, D.3.3, and D.4.1 and with the potential to emit from other units at the source, shall limit the source-wide total potential to emit of PM, PM10, and PM2.5 emissions from the entire source to less than one hundred (100) tons per twelve (12) consecutive month period, each. Therefore, the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) are not applicable.

**D.3.3 Volatile Organic Compounds (VOC) and Particulate (PM, PM10, and PM2.5) Emission Limits [326 IAC 2-8-4(1)] [326 IAC 2-2]**

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The production of asphalt products at each facility (EU 4.9, 6.1, 7.1, 7.2, and ID# 93) shall not exceed 454,200 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM, PM10, PM2.5, and VOC emissions from EU 6.1, EU 7.1, EU 7.2, and ID# 93 shall not exceed the emission limits in the following table:

Unit ID	Emission Limit (lb/ton of asphalt produced)			
	PM	PM10	PM2.5	VOC
EU 6.1	0.031	0.031	0.031	0.091
EU 7.1	--	--	--	0.003
EU 7.2	0.07	0.07	0.07	0.020
ID# 93	0.0383	0.0383	0.0383	0.0998

Compliance with these limits, combined with the PM, PM10, PM2.5, and VOC limits in Conditions D.2.1, D.3.2, and D.4.1 and with the potential to emit from other units at the source, shall limit the source-wide total potential to emit of PM, PM10, PM2.5, and VOC to less than one hundred (100) tons per twelve (12) consecutive month period, each. Therefore, the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) are not applicable.

#### D.3.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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A Preventive Maintenance Plan is required for these facilities and their respective 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.3.5 Particulate Control

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In order to ensure compliance with Conditions D.3.1, D.3.2, and D.3.3, the baghouses, bin vent filters and fiber bed filters for PM, PM10, and PM2.5 control shall be in operation and control emissions from the facilities EU 4.1 through 4.11, EU 6.1, EU 7.1 and EU NFH at all times that these facilities are in operation.

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

#### D.3.6 Visible Emissions Notations

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- (a) Visible emissions notations of the respective EU 4.1 through EU 4.11, EU NFH, EU 6.1, EU 7.1, and EU 7.2 stack exhaust shall be performed during normal daylight operations.
- (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 a reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

#### D.3.7 Parametric Monitoring

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- (a) The Permittee shall record the pressure drop across the respective baghouses and bin vent filter used in conjunction with each facility (EU 4.1 through EU 4.11 and EU NFH) at least once per day when each facility is in operation. When, for any one reading, the pressure drop across each baghouse and bin vent filter is outside the normal range, the Permittee shall take a reasonable response. The normal range for these units is a pressure drop between 0.25 and 8 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.
- (b) The Permittee shall record the pressure drop across the fiber bed filter and the baghouse respectively used in conjunction with EU 6.1 and EU 7.1, at least once per day when each facility is in operation. When, for any one reading, the pressure drop across each baghouse and bin vent filter is outside the normal range, the Permittee shall take a reasonable response. The normal ranges for these units are a pressure drop between 4 and 20 inches of water and 0.25 and 10 inches of water, respectively, unless a different upper-bound or lower-bound value for these ranges is determined during the latest stack



test. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

- (c) 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. Those baghouses utilizing "Smartimers" (factor-calibrated instruments used for determining the pressure drop of dust collectors which do not require field calibration) shall be subject to approval by IDEM, OAQ, but shall not be subject to calibration at least once every six (6) months.

#### **D.3.8 Broken or Failed Filter and Bag Detection**

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

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

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

#### **D.3.9 Record Keeping Requirements**

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- (a) To document the compliance status with Condition D.3.3, the Permittee shall maintain records in accordance with (1) and (2) below. Records maintained for (1) and (2) shall be taken monthly and shall be complete and sufficient to establish compliance with annual production limit in Condition D.3.3.
  - (1) Calendar dates covered in the compliance period.
  - (2) Asphalt product production per month since the last compliance determination period.
- (b) To document the compliance status with Condition D.3.6, the Permittee shall maintain records of daily visible emission notations of EU 4.1 through EU 4.11, EU NFH, EU 6.1, EU 7.1, and EU 7.2 stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (e.g., the process did not operate that day).
- (c) To document the compliance status with Condition D.3.7, the Permittee shall maintain records once per day of the pressure drop across the fiber bed filter and baghouses controlling EU 4.1 through EU 4.11, EU NFH, EU 6.1, and EU 7.1. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g., the process did not operate that day). During periods of inclement weather, a log must be kept of dates when readings are not taken.

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

#### D.3.10 Reporting Requirements

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A quarterly summary of the information to document the compliance status with Condition D.3.3 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.4

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

- (d) One (1) asphalt filler mixer identified as EU 5.1, rated at 300 gallons per minute, utilizing a screw conveyor for mineral filling and gravity flow for tank emptying, as an enclosed facility without an exhaust stack.

Under 40 CFR 63, Subpart AAAAAAA, the asphalt filler mixer (EU 5.1) is considered an affected facility.

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

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

#### D.4.1 Volatile Organic Compounds (VOC) and Particulate (PM, PM10, and PM2.5) Emission Limits [326 IAC 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

The throughput to the asphalt filler mixer (EU 5.1) shall not exceed 28,502,400 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit, combined with the PM, PM10, PM2.5, and VOC limits in Conditions D.2.1, D.3.2, and D.3.3 and with the potential to emit from other units at this source, shall limit the source-wide total potential to emit of PM, PM10, PM2.5 and VOC to less than one hundred (100) tons per twelve (12) consecutive month period, each. Therefore, the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) are not applicable.

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

#### D.4.2 Record Keeping Requirements

- (a) To document the compliance status with Condition D.4.1, the Permittee shall maintain records in accordance with (1) and (2) below. Records maintained for (1) and (2) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.4.1:

- (1) Calendar dates covered in the compliance determination period;
- (2) The throughput to EU 5.1 per month since the last compliance determination period.

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

#### D.4.3 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.4.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.5

## FACILITY OPERATION CONDITIONS

### **Facility Description [326 IAC 2-8-4(10)]:**

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units (Btu) per hour. This includes one (1) 0.25 Million British Thermal Units per hour rated boiler installed after 1983. [326 IAC 6-2-4]
- (b) degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, including two cold cleaning parts washers installed in 2000. [326 IAC 8-3-2]

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

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

#### **D.5.1 Particulate [326 IAC 6-2-4]**

Pursuant to 326 IAC 6-2-4(a) (Particulate Matter Emission Limitations for Sources of Indirect Heating), PM emissions from the 0.25 MMBtu/hr boiler, which began operation after September 21, 1983, shall be limited to 0.6 pounds per MMBtu heat input.

#### **D.5.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]**

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Degreaser Control Equipment and Operating Requirements), for cold cleaning degreasers constructed after January 1, 1980, the Permittee shall ensure that the following control equipment and operating requirements are met for each of the two (2) cold cleaning facilities installed in 2000:

- (a) Equip the degreaser with a cover.
- (b) Equip the degreaser with a device for draining cleaned parts.
- (c) Close the degreaser cover whenever parts are not being handled in the degreaser.
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases.
- (e) Provide a permanent, conspicuous label that lists the operating requirements in (c), (d), (f), and (g) of this condition.
- (f) Store waste solvent only in closed containers.
- (g) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

#### **D.5.3 Volatile Organic Compounds (VOC) [326 IAC 8-3-8]**

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), on and after January 1, 2015, the Permittee shall not operate a cold cleaner degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

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

### **D.5.4 Record Keeping Requirements**

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- (a) Pursuant to 326 IAC 8-3-8(c)(2), on and after January 1, 2015, the following records shall be maintained for each purchase of cold cleaner degreaser solvent:
  - (1) The name and address of the solvent supplier.
  - (2) The date of purchase (or invoice/bill dates of contract servicer indicating service date).
  - (3) The type of solvent purchased.
  - (4) The total volume of the solvent purchased.
  - (5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).
- (b) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required by this condition.

## SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

- (d) One (1) asphalt filler mixer identified as EU 5.1, rated at 300 gallons per minute, utilizing a screw conveyor for mineral filling and gravity flow for tank emptying, as an enclosed facility without an exhaust stack.
- (e)(2) One (1) asphalt coater (coating rolls) and coating surge tank identified as EU 6.1, installed in 2006, with particulate matter controlled by one (1) fiber bed filter, exhausting at one (1) stack identified as 36.

Under 40 CFR 63, Subpart AAAAAAA, the asphalt filler mixer (EU 5.1) and asphalt coater (coating rolls) and coating surge tank (EU 6.1) are considered affected facilities.

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

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

#### E.1.1 General Provisions Relating to NESHAP [40 CFR Part 63, Subpart A] [326 IAC 20-1]

Pursuant to 40 CFR 63.11565, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, as specified in Table 5 of 40 CFR 63, Subpart AAAAAAA in accordance with the schedule in 40 CFR 63, Subpart AAAAAAA.

#### E.1.2 NESHAP for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing [40 CFR Part 63, Subpart AAAAAAA]

The Permittee, which is primarily engaged in operations of manufacturing asphalt roofing at an area source of HAP emissions shall comply with the following provisions of 40 CFR Part 63, Subpart AAAAAAA (included as Attachment A of this permit):

- (1) 40 CFR 63.11559
- (2) 40 CFR 63.11560(a)
- (3) 40 CFR 63.11561(b) and (c)
- (4) 40 CFR 63.11562
- (5) 40 CFR 63.11563
- (6) 40 CFR 63.11564
- (7) 40 CFR 63.11565
- (8) 40 CFR 63.11566
- (9) 40 CFR 63.11567
- (10) Table 2
- (11) Table 3
- (12) Table 4
- (13) Table 5

#### E.1.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [40 CFR 63.11562]

In order to determine compliance with Condition E.1.2, the Permittee shall perform the stack testing required under NESHAP 40 CFR 63, Subpart AAAAAAA, no later than five (5) years from the most recent valid compliance demonstration, utilizing methods as specified in 40 CFR 63, Subpart AAAAAAA and as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling

Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition

## SECTION E.2

## EMISSIONS UNIT OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

- (b)(1) One (1) 40,000 gallon capacity asphalt tank #1 identified as EU 2.1, installed in 1990, rated at 200 gallons per minute, with a fiber filter bed to control particulate matter, exhausting at one (1) stack identified as 71.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], the asphalt storage tank EU 2.1 is considered an affected facility.

- (c)(2) One (1) filler silo #2 identified as EU 4.2, installed in 1991, rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing Smartimers for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 77.
- (c)(3) One (1) filler silo #4 identified as EU 4.3, modified in 2008, rated at 64.2 thousand cubic feet per hour, with particulate matter controlled by two (2) baghouses utilizing 'Smartimers' for controlling cleaning cycle frequency, with each exhausting at one (1) individual stack identified as 80 and 81.
- (c)(4) One (1) filler silo #3 identified as EU 4.6, installed in 2008, rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 82.
- (c)(5) One (1) parting agent silo #5, identified as EU 4.4, modified in 2008, storage capacity of 150 tons of sand, process weight rate of 2.2 tons per hour, exhaust gas flow rate rated at 32.1 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting to stack identified as S79.
- (c)(6) One (1) parting agent use bin identified as EU 4.5, installed in 1991, rated at 27 thousand cubic feet per hour, with particulate matter controlled by one (1) baghouse common to this facility, EU4.11, and EU 7.1, with the baghouse equipped with Smartimers for controlling cleaning cycle frequency, exhausting at one (1) stack identified as 14.
- (c)(10) One (1) surfacing material silo #7 identified as EU 4.10, installed in 1996, rated at 30 thousand cubic feet per hour, with particulate matter controlled by one (1) cartridge dust collector identified as C-4.10 exhausting at one (1) stack identified as S83.
- (c)(11) One (1) surfacing material receiving bin rated at 30 thousand cubic feet per hour and identified as EU 4.11, installed in 1996, with particulate matter controlled by one (1) baghouse common to this facility, EU 4.5, and EU 7.1, with the baghouse equipped with Smartimers for controlling cleaning cycle frequency, all exhausting at one (1) stack identified as 14.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], mineral storage facilities (EU 4.6, EU 4.2 through EU 4.5, EU 4.10, and EU 4.11) are considered affected facilities.

- (e)(1) Six (6) surfacing material silos #1 - #6 collectively identified as EU 4.9, installed after November 1980, with particulate matter controlled by one (1) baghouse identified as C-4.9, utilizing 'Smartimers' for controlling cleaning cycle frequency, exhausting at one (1) stack identified as S100.
- (e)(2) One (1) asphalt coater (coating rolls) and coating surge tank identified as EU 6.1, installed in 2006, with particulate matter controlled by one (1) fiber bed filter, exhausting at one (1) stack



identified as 36.

Under the Standards of Performance for Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR Part 60, Subpart UU], the surfacing material silos #1 - #6 (EU 4.9) and the asphalt coater and coating surge tank (EU 6.1) are considered affected facilities.

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

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

#### **E.2.1 General Provisions Relating to NSPS, Subpart UU [326 IAC 12-1] [40 CFR 60, Subpart A]**

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 60, Subpart UU.

#### **E.2.2 New Source Performance Standards for Asphalt Processing and Asphalt Roofing Manufacture [40 CFR 60, Subpart UU] [326 IAC 12]**

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

(a) For EU 2.1:

- (1) 40 CFR 60.470
- (2) 40 CFR 60.471
- (3) 40 CFR 60.472(c)
- (4) 40 CFR 60.474(b)
- (5) 40 CFR 60.474(c)(5)

(b) For EU 6.1:

- (1) 40 CFR 60.470
- (2) 40 CFR 60.471
- (3) 40 CFR 60.472(a)(1)(i) and (ii)
- (4) 40 CFR 60.472(a)(2)
- (5) 40 CFR 60.472(a)(3)
- (6) 40 CFR 60.474(a)(1)
- (7) 40 CFR 60.474(a)(2)
- (8) 40 CFR 60.474(b)
- (9) 40 CFR 60.474(c)(1)
- (10) 40 CFR 60.474(c)(2)
- (11) 40 CFR 60.474(c)(3)
- (12) 40 CFR 60.474(c)(5)
- (13) 40 CFR 60.474(d)

(c) For EU 4.2, EU 4.3, EU 4.4, EU 4.5, EU 4.6, EU 4.9, EU 4.10, EU 4.11:

- (1) 40 CFR 60.470
- (2) 40 CFR 60.471
- (3) 40 CFR 60.472(d)
- (4) 40 CFR 60.474(b)
- (5) 40 CFR 60.474(c)(5)

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

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In order to demonstrate compliance with 40 CFR 60, Subpart UU, which is incorporated by reference as 326 IAC 12:

- (a) The Permittee shall perform opacity testing for operations EU 2.1, EU 4.2, EU 4.3, EU 4.4, EU 4.5, EU 4.6, EU 4.9, EU 4.10, EU 4.11, and EU 6.1 no later than five (5) years from the date of the most recent valid compliance demonstration utilizing methods as specified in 40 CFR 60, Subpart UU and as approved by the commissioner. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.
- (b) The Permittee shall perform PM testing for EU 6.1 no later than five (5) years from the date of the most recent valid compliance demonstration utilizing methods as specified in 40 CFR 60, Subpart UU and as approved by the commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.
- (c) 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.

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

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

Source Name: Owens Corning Roofing & Asphalt, LLC  
Source Address: 128 W. Eighth Street, Brookville, Indiana 47012  
FESOP Permit No.: F047-24313-00005

**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: Owens Corning Roofing & Asphalt, LLC  
Source Address: 128 W. Eighth Street, Brookville, Indiana 47012  
FESOP Permit No.: F047-24313-00005

**This form consists of 2 pages**

**Page 1 of 2**

- |  |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none"><li>• 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</li><li>• 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</li></ul> |
|--|

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: Owens Corning Roofing & Asphalt, LLC  
Source Address: 128 W. Eighth Street, Brookville, Indiana 47012  
FESOP Permit No.: F047-24313-00005  
Facility: Three (3) liquid storage tanks EU 2.1, EU 2.2, and EU 2.3  
Parameter: Storage Tank Material Throughput  
Limit: (a) The total throughput to asphalt tanks #1 (EU 2.1) is limited to 28,502,400 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.  
  
(b) The throughput to each of adhesive tanks #7 (EU 2.2) and #7A (EU 2.3) is limited to 1,295,640 gallons per twelve (12) consecutive months with compliance determined at the end of each month.

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

Month	Throughput This Month (gallons)			Throughput Previous 11 Months (gallons)			12 Month Total Throughput (gallons)		
	EU2.1	EU2.2	EU2.3	EU2.1	EU2.2	EU2.3	EU2.1	EU2.2	EU2.3
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**

Source Name: Owens Corning Roofing & Asphalt, LLC  
Source Address: 128 W. Eighth Street, Brookville, Indiana 47012  
FESOP Permit No.: F047-24313-00005  
Facility: Asphalt filler mixer (EU 5.1)  
Parameter: Material Throughput  
Limit: The throughput to the asphalt filler mixer (EU 5.1) is limited to 28,502,400 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

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

Month	Total Throughput This Month (gallons)	Total Throughput Previous 11 Months (gallons)	12 Month Total Throughput (gallons)
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**

Source Name: Owens Corning Roofing & Asphalt, LLC  
Source Address: 128 W. Eighth Street, Brookville, Indiana 47012  
FESOP Permit No.: F047-24313-00005  
Facility: The five (5) facilities EU 4.9 (surfacing material silos #1 - #6 collectively), EU 6.1 (asphalt coater and surge tank), EU 7.1 (material surfacing applicator), EU 7.2 (cooling section), and ID #93 (fugitive emissions building ventilators)  
Parameter: Asphalt product production rate  
Limit: The production of asphalt product at each facility is limited to 454,200 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

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

Month	Asphalt Product * Produced This Month (tons)	Asphalt Product * Produced Previous 11 Months (tons)	12 Month Asphalt Product Produced (tons)
Month 1			
Month 2			
Month 3			

\* Specify the greatest production rate, if the rates differ among the five (5) subject facilities.

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

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

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

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

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

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



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

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Owens Corning Roofing & Asphalt, LLC  
Source Address: 128 W. Eighth Street, Brookville, Indiana 47012  
FESOP Permit No.: F047-24313-00005

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

Page 1 of 2

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

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

**Permit Requirement** (specify permit condition #)

**Date of Deviation:**

**Duration of Deviation:**

**Number of Deviations:**

**Probable Cause of Deviation:**

**Response Steps Taken:**

**Permit Requirement** (specify permit condition #)

**Date of Deviation:**

**Duration of Deviation:**

**Number of Deviations:**

**Probable Cause of Deviation:**

**Response Steps Taken:**

<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: \_\_\_\_\_

**Attachment A**  
**To FESOP No.: F047-24313-00005**

[Downloaded from the eCFR on September 30, 2013]

**Electronic Code of Federal Regulations**

**Title 40: Protection of Environment**

**40 CFR Part 63, Subpart AAAAAAA—National Emission Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing**

Source: 74 FR 63260, Dec. 2, 2009, unless otherwise noted.

**Applicability and Compliance Dates**

**§ 63.11559 Am I subject to this subpart?**

(a) You are subject to this subpart if you own or operate an asphalt processing operation and/or asphalt roofing manufacturing operation that is an area source of hazardous air pollutant (HAP) emissions, as defined in § 63.2.

(b) This subpart applies to each new or existing affected source as defined in paragraphs (b)(1) and (b)(2) of this section.

(1) *Asphalt processing.* The affected source for asphalt processing operations is the collection of all blowing stills, as defined in § 63.11566, at an asphalt processing operation.

(2) *Asphalt roofing manufacturing.* The affected source for asphalt roofing manufacturing operations is the collection of all asphalt coating equipment, as defined in § 63.11566, at an asphalt roofing manufacturing operation.

(c) This subpart does not apply to hot mix asphalt plant operations that are used in the paving of roads or hardstand, or operations where asphalt may be used in the fabrication of a built-up roof.

(d) An affected source is a new affected source if you commenced construction or reconstruction after July 9, 2009.

(e) An affected source is reconstructed if it meets the criteria as defined in § 63.2.

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

(g) This subpart does not apply to research or laboratory facilities, as defined in section 112(c)(7) of the Clean Air Act.

(h) You are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

**§ 63.11560 What are my compliance dates?**

(a) If you own or operate an existing affected source, you must be in compliance with the applicable provisions in this subpart no later than December 2, 2010. As specified in § 63.11562(f), you must demonstrate initial compliance within 180 calendar days after December 2, 2010.

(b) If you own or operate a new affected source, you must be in compliance with the provisions in this subpart on or before December 2, 2009 or upon startup, whichever date is later. As specified in § 63.11562(g), you must demonstrate initial compliance with the applicable emission limits no later than 180 calendar days after December 2, 2009 or within 180 calendar days after startup of the source, whichever is later.

## **Standards and Compliance Requirements**

### **§ 63.11561 What are my standards and management practices?**

- (a) For asphalt processing operations, you must meet the emission limits specified in Table 1 of this subpart.
- (b) For asphalt roofing manufacturing lines, you must meet the applicable emission limits specified in Table 2 of this subpart.
- (c) These standards apply at all times.

### **§ 63.11562 What are my initial compliance requirements?**

- (a) For asphalt processing operations, you must:
  - (1) Demonstrate initial compliance with the emission limits specified in Table 1 of this subpart by:
    - (i) Conducting emission tests using the methods specified in Table 3 of this subpart; or
    - (ii) Using the results of a previously-conducted emission test as specified in paragraph (d) of this section.
  - (2) Establish the value or range of values of the operating parameters specified in Table 4 of this subpart:
    - (i) Using the operating parameter data recorded during the compliance emission tests; or
    - (ii) Using the operating parameter data recorded during a previously-conducted emission test.
- (b) For asphalt roofing manufacturing lines that use a control device to comply with the emission limits in Table 2 of this subpart, you must:
  - (1) Demonstrate initial compliance by:
    - (i) Conducting emission tests using the methods specified in Table 3 of this subpart; or
    - (ii) Using the results of a previously-conducted emission test as specified in paragraph (d) of this section.
  - (2) Establish the value of the operating parameter specified in Table 4 of this subpart for thermal oxidizers:
    - (i) Using the operating parameter data recorded during the compliance emission tests; or
    - (ii) Using the operating parameter data recorded during a previously-conducted emission test.
  - (3) Establish the value or range of values of the operating parameters specified in Table 4 of this subpart for control devices other than thermal oxidizers:
    - (i) Using the operating parameter data recorded during the compliance emission tests;
    - (ii) Using the operating parameter data recorded during a previously-conducted emission test; or
    - (iii) Using manufacturer performance specifications.
- (c) For asphalt roofing manufacturing lines that do not require a control device to comply with the emission limits in Table 2 of this subpart, you must:

(1) Demonstrate initial compliance by:

- (i) Conducting emission tests using the methods specified in Table 3 of this subpart,
- (ii) Using the results of a previously-conducted emission test as specified in paragraph (d) of this section; or
- (iii) Using process knowledge and engineering calculations as specified in paragraph (e) of this section.

(2) Establish the value or range of values of the operating parameters specified in Table 4 of this subpart:

- (i) Using the operating parameter data recorded during the compliance emission tests;
- (ii) Using the operating parameter data recorded during a previously-conducted emission test; or
- (iii) Using process knowledge and engineering calculations as specified in paragraph (f) of this section.

(d) If you are using a previously-conducted emission test to demonstrate compliance with the emission limitations in this subpart for existing sources, as specified in paragraphs (a)(1)(ii), (b)(1)(ii), or (c)(1)(ii) of this section, the following conditions must be met:

- (1) The emission test was conducted within the last 5 years;
- (2) No changes have been made to the process since the time of the emission test;
- (3) The operating conditions and test methods used for the previous test conform to the requirements of this subpart; and
- (4) The data used to establish the value or range of values of the operating parameters, as specified in paragraphs (a)(2)(ii), (b)(2)(ii), or (c)(2)(ii) of this section, were recorded during the emission test.

(e) If you are using process knowledge and engineering calculations to demonstrate initial compliance as specified in paragraph (c)(1)(iii) of this section, you must prepare written documentation that contains the data and any assumptions used to calculate the process emission rate that demonstrate compliance with the emission limits specified in Table 2 of this subpart.

(f) If you are using process knowledge and engineering calculations to establish the value or range of values of operating parameters as specified in paragraph (c)(2)(iii) of this section, you must prepare written documentation that contains the data and any assumptions used to show that the process parameters and corresponding parameter values correlate to the process emissions.

(g) For existing sources, you must demonstrate initial compliance no later than 180 calendar days after December 2, 2010.

(h) For new sources, you must demonstrate initial compliance no later than 180 calendar days after December 2, 2009 or within 180 calendar days after startup of the source, whichever is later.

(i) For emission tests conducted to demonstrate initial compliance with the emission limits specified in Tables 1 and 2 of this subpart, you must follow the requirements specified in paragraphs (i)(1) through (i)(4) of this section.

(1) You must conduct the tests while manufacturing the product that generates the greatest PAH and PM emissions to the control device inlet, or exiting the process if you are not using a control device to comply with the emissions limits specified in Tables 1 and 2 of this subpart.

(2) You must conduct a minimum of three separate test runs for each compliance test specified in paragraphs (a)(1)(i), (b)(1)(i), and (c)(1)(i) of this section according to the requirements specified in § 63.7(e)(3). The sampling time and sample volume of each test run must be as follows:

(i) For asphalt processing operations, the sampling time and sample volume for each test run must be at least 90 minutes or the duration of the coating blow or non-coating blow, whichever is greater, and 2.25 dscm (79.4 dscf).

(ii) For asphalt coating operations, the sampling time and sample volume for each test run must be at least 120 minutes and 3.00 dscm (106 dscf).

(3) For asphalt processing operations, you must use the following equations to calculate the asphalt charging rate (P).

$$(i) P = (Vd)/(K' \Theta)$$

Where:

P = asphalt charging rate to blowing still, Mg/hr (ton/hr).

V = volume of asphalt charged, m<sup>3</sup> (ft<sup>3</sup>).

d = density of asphalt, kg/m<sup>3</sup> (lb/ft<sup>3</sup>).

K' = conversion factor, 1000 kg/Mg (2000 lb/ton).

Θ = duration of test run, hr.

$$(ii) d = K_1 - K_2 T_i$$

Where:

d = Density of the asphalt, kg/m<sup>3</sup> (lb/ft<sup>3</sup>)

$$d = K_1 - K_2 T_i$$

K<sub>1</sub> = 1056.1 kg/m<sup>3</sup> (metric units)

= 66.6147 lb/ft<sup>3</sup> (English Units)

K<sub>2</sub> = 0.6176 kg/(m<sup>3</sup> °C) (metric units)

= 0.02149 lb/(ft<sup>3</sup> °F) (English Units)

T<sub>i</sub> = temperature at the start of the blow, °C (°F)

(4) You must use the following equation to demonstrate compliance with the emission limits specified in Table 2 of this subpart:

$$E = [(C)(Q)/(P)(K)]$$

Where:

E = emission rate of particulate matter, kg/Mg (lb/ton).

C = concentration of particulate matter, g/dscm (gr/dscf).

Q = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P = the average asphalt roofing production rate or asphalt charging rate over the duration of the test, Mg/hr (ton/hr).

K = conversion factor, 1000 g/kg [7000 (gr/lb)].

#### **§ 63.11563 What are my monitoring requirements?**

(a) You must maintain the operating parameters established under § 63.11562(a)(2), (b)(2), (b)(3), and (c)(2) as specified in Table 4 of this subpart.

(b) If you are using a control device to comply with the emission limits specified in Tables 1 and 2 of this subpart, you must develop and make available for inspection by the delegated authority, upon request, a site-specific monitoring plan for each monitoring system that addresses the following:

(1) Installation of the CPMS probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions ( e.g., on or downstream of the last control device);

(2) Performance and equipment specifications for the probe or interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction system; and

(3) Performance evaluation procedures and acceptance criteria ( e.g., calibrations).

(i) In your site-specific monitoring plan, you must also address the following:

(A) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1), (c)(3), (c)(4)(ii), (c)(7), and (c)(8);

(B) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d); and

(C) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c), (e)(1), and (e)(2)(i).

(c) If you are using a control device to comply with the emission limits specified in Tables 1 and 2 of this subpart, you must install, operate, and maintain a continuous parameter monitoring system (CPMS) as specified in paragraphs (c)(1) through (c)(3) of this section.

(1) The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period.

(2) To determine the 3-hour average, you must:

(i) Have a minimum of four successive cycles of operation to have a valid hour of data.

(ii) Have valid data from at least three of four equally spaced data values for that hour from a CPMS that is not out-of-control according to your site-specific monitoring plan.

(iii) Determine the 3-hour average of all recorded readings for each operating day, except as stated in paragraph (g) of this section. You must have at least two of the three hourly averages for that period using only hourly average values that are based on valid data ( i.e., not from out-of-control periods).

(3) You must record the results of each inspection, calibration, and validation check of the CPMS.

(d) For each temperature monitoring device, you must meet the CPMS requirements in paragraphs (c)(1) through (c)(3) of this section and the following requirements:

- (1) Locate the temperature sensor in a position that provides a representative temperature.
- (2) For a noncryogenic temperature range, use a temperature sensor with a minimum measurement sensitivity of 2.8 °C or 1.0 percent of the temperature value, whichever is larger.
- (3) If a chart recorder is used, the recorder sensitivity in the minor division must be at least 20 °F.
- (4) Perform an accuracy check at least semiannually or following an operating parameter deviation:
  - (i) According to the procedures in the manufacturer's documentation; or
  - (ii) By comparing the sensor output to redundant sensor output; or
  - (iii) By comparing the sensor output to the output from a calibrated temperature measurement device; or
  - (iv) By comparing the sensor output to the output from a temperature simulator.
- (5) Conduct accuracy checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor.
- (6) At least quarterly or following an operating parameter deviation, perform visual inspections of components if redundant sensors are not used.

(e) For each pressure measurement device, you must meet the CPMS requirements of paragraphs (e)(1) through (e)(6) of this section and the following requirements:

- (1) Locate the pressure sensor(s) in, or as close as possible, to a position that provides a representative measurement of the pressure.
- (2) Use a gauge with a minimum measurement sensitivity of 0.12 kiloPascals or a transducer with a minimum measurement sensitivity of 5 percent of the pressure range.
- (3) Check pressure tap for blockage daily. Perform an accuracy check at least quarterly or following an operating parameter deviation:
  - (i) According to the manufacturer's procedures; or
  - (ii) By comparing the sensor output to redundant sensor output.
- (4) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.
- (5) At least monthly or following an operating parameter deviation, perform a leak check of all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.
- (6) At least quarterly or following an operating parameter deviation, perform visible inspections on all components if redundant sensors are not used.

(f) For each electrostatic precipitator (ESP) used to control emissions, you must install and operate a CPMS that meets the requirements of paragraphs (c)(1) through (c)(3) of this section to provide representative measurements of the voltage supplied to the ESP.



(g) If you are not using a control device to comply with the emission limits specified in Tables 1 and 2 of this subpart, you must develop and make available for inspection by the delegated authority, upon request, a site-specific monitoring plan. The plan must specify the process parameters established during the initial compliance assessment and how they are being monitored and maintained to demonstrate continuous compliance.

(h) If you would like to use parameters or means other than those specified in Table 4 of this subpart to demonstrate continuous compliance with the emission limits specified in Tables 1 and 2 of this subpart, you must apply to the Administrator for approval of an alternative monitoring plan under § 63.8(f). The plan must specify how process parameters established during the initial compliance assessment will be monitored and maintained to demonstrate continuous compliance.

(i) At all times the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(j) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(k) You must operate and maintain the CPMS in continuous operation according to the site-specific monitoring plan.

[74 FR 63260, Dec. 2, 2009, as amended at 75 FR 12989, Mar. 18, 2010]

#### **§ 63.11564 What are my notification, recordkeeping, and reporting requirements?**

(a) You must submit the notifications specified in paragraphs (a)(1) through (a)(6) of this section.

(1) You must submit all of the notifications in §§ 63.5(b), 63.7(b); 63.8(e) and (f); 63.9(b) through (e); and 63.9(g) and (h) that apply to you by the dates specified in those sections.

(2) As specified in § 63.9(b)(2), if you have an existing affected source, you must submit an Initial Notification not later than 120 calendar days after December 2, 2009.

(3) As specified in § 63.9(b)(4) and (5), if you have a new affected source, you must submit an Initial Notification not later than 120 calendar days after you become subject to this subpart.

(4) You must submit a notification of intent to conduct a compliance test at least 60 calendar days before the compliance test is scheduled to begin, as required in § 63.7(b)(1).

(5) You must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii). You must submit the Notification of Compliance Status, including the compliance test results, before the close of business on the 60th calendar day following the completion of the compliance test according to § 63.10(d)(2).

(6) If you are using data from a previously-conducted emission test to serve as documentation of compliance with the emission standards and operating limits of this subpart, you must submit the test data in lieu of the initial compliance test results with the Notification of Compliance Status required under paragraph (a)(5) of this section.

(b) You must submit a compliance report as specified in paragraphs (b)(1) through (b)(4) of this section.

(1) If you are using a control device to comply with the emission limits, the compliance report must identify the controlled units ( e.g., blowing stills, saturators, coating mixers, coaters). If you are not using a control device to comply with the emission limits, the compliance report must identify the site-specific process operating parameters monitored to determine compliance with the emission limits.

(i) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.11560 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.11560.

(ii) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.11560.

(iii) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(iv) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(c) You must maintain the records specified in paragraphs (c)(1) through (c)(10) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirements in § 63.10(b)(2)(xiv).

(2) Copies of emission tests used to demonstrate compliance and performance evaluations as required in § 63.10(b)(2)(viii).

(3) Documentation that shows that the following conditions are true if you use a previously-conducted emission test to demonstrate initial compliance as specified in § 63.11562(a)(1)(ii), (b)(1)(ii), and (c)(1)(ii):

(i) The test was conducted within the last 5 years;

(ii) No changes have been made to the process since the time of the emission test;

(iii) The operating conditions and test methods used for the previous test conform to the requirements of this subpart; and

(iv) The data used to establish the value or range of values of the operating parameters, as specified in § 63.11562(a)(2)(ii), (b)(2)(ii), or (c)(2)(ii), were recorded during the emission test.

(4) Documentation that identifies the operating parameters and values specified in Table 4 of this subpart and that contains the data used to establish the parameter values as specified in § 63.11562(a)(2), (b)(2), (b)(3), or (c)(2).

(5) Copies of the written manufacturers performance specifications used to establish operating parameter values as specified in § 63.11562(b)(3)(iii).

(6) Documentation of the process knowledge and engineering calculations used to demonstrate initial compliance as specified in § 63.11562(e).

(7) Documentation of the process knowledge and engineering calculations used to establish the value or range of values of operating parameters as specified in § 63.11562(f).

(8) A copy of the site-specific monitoring plan required under § 63.11563(b) or (g).

(9) A copy of the approved alternative monitoring plan required under § 63.11563(h), if applicable.

(10) Records of the operating parameter values required in Table 4 of this subpart to show continuous compliance with each operating limit that applies to you.

## Other Requirements and Information

### § 63.11565 What general provisions sections apply to this subpart?

You must comply with the requirements of the General Provisions (40 CFR part 63, subpart A) according to Table 5 of this subpart.

### § 63.11566 What definitions apply to this subpart?

*Asphalt coating equipment* means the saturators, coating mixers, and coaters used to apply asphalt to substrate to manufacture roofing products ( e.g., shingles, roll roofing).

*Asphalt flux* means the organic residual material from distillation of crude oil that is generally used in asphalt roofing manufacturing and paving and non-paving asphalt products.

*Asphalt processing operation* means any operation engaged in the preparation of asphalt flux at stand-alone asphalt processing facilities, petroleum refineries, and asphalt roofing facilities. Asphalt preparation, called “blowing,” is the oxidation of asphalt flux, achieved by bubbling air through the heated asphalt, to raise the softening point and to reduce penetration of the oxidized asphalt. An asphalt processing facility includes one or more asphalt flux blowing stills.

*Asphalt roofing manufacturing operation* means the collection of equipment used to manufacture asphalt roofing products through a series of sequential process steps. The equipment configuration of an asphalt roofing manufacturing process varies depending upon the type of substrate used ( i.e., organic or inorganic). For example, an asphalt roofing manufacturing line that uses organic substrate ( e.g., felt) typically would consist of a saturator (and wet looper), coating mixer, and coater (although the saturator could be bypassed if the line manufacturers multiple types of products). An asphalt roofing manufacturing line that uses inorganic (fiberglass mat) substrate typically would consist of a coating mixer and coater.

*Blowing still* means the equipment in which air is blown through asphalt flux to change the softening point and penetration rate of the asphalt flux, creating oxidized asphalt.

*Built-up roofing operations* means operations involved in the on-site ( e.g., at a commercial building) assembly of roofing system components ( e.g., asphalt, substrate, surface granules).

*Coater* means the equipment used to apply amended (filled or modified) asphalt to the top and bottom of the substrate (typically fiberglass mat) used to manufacture shingles and rolled roofing products.

*Coating mixer* means the equipment used to mix coating asphalt and a mineral stabilizer, prior to applying the stabilized coating asphalt to the substrate.

*Hot-mix asphalt operation* means operations involved in mixing asphalt cement and aggregates to produce materials for paving roadways and hardstand ( e.g., vehicle parking lots, prepared surfaces for materiel storage).

*Particulate matter (PM)* means, for the purposes of this subpart, includes any material determined gravimetrically using EPA Method 5A—Determination of Particulate Matter Emissions From the Asphalt Processing And Asphalt Roofing Industry (40 CFR part 60, appendix A-3).

*Responsible official* is defined in § 63.2.

*Saturator* means the equipment used to impregnate a substrate (predominantly organic felt) with asphalt. Saturators are predominantly used for the manufacture of rolled-roofing products ( e.g., saturated felt). For the purposes of this subpart, the term saturator includes impregnation vat and wet looper.

*Wet looper* means the series of rollers typically following the saturator used to provide additional absorption time for asphalt to penetrate the roofing substrate.

**§ 63.11567 Who implements and enforces this subpart?**

(a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (U.S. EPA), or a delegated authority such as your State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under 40 CFR part 63, subpart E, the following authorities are retained by the Administrator of U.S. EPA:

- (1) Approval of alternatives to the requirements in §§ 63.11559, 63.11560, 63.11561, 63.11562, and 63.11563.
- (2) Approval of major changes to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.
- (3) Approval of major changes to monitoring under § 63.8(f) and as defined in § 63.90.
- (4) Approval of major changes to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

**Table 1 of Subpart AAAAAAA of Part 63—Emission Limits for Asphalt Processing (Refining) Operations**

For * * *	You must meet the following emission limits * * *
1. Blowing stills	a. Limit PAH emissions to 0.003 lb/ton of asphalt charged to the blowing stills; or
	b. Limit PM emissions to 1.2 lb/ton of asphalt charged to the blowing stills.

**Table 2 of Subpart AAAAAAA of Part 63—Emission Limits for Asphalt Roofing Manufacturing (Coating) Operations**

For * * *	
1. Coater-only production lines	a. Limit PAH emissions to 0.0002 lb/ton of asphalt roofing product manufactured; or
	b. Limit PM emissions to 0.06 lb/ton of asphalt roofing product manufactured.
2. Saturator-only production lines	a. Limit PAH emissions to 0.0007 lb/ton of asphalt roofing product manufactured; or
	b. Limit PM emissions to 0.30 lb/ton of asphalt roofing product manufactured.
3. Combined saturator/coater production lines	a. Limit PAH emissions to 0.0009 lb/ton of asphalt roofing product manufactured; or
	b. Limit PM emissions to 0.36 lb/ton of asphalt roofing product manufactured.

**Table 3 of Subpart AAAAAAA of Part 63—Test Methods**

For * * *	You must use * * *
1. Selecting the sampling locations <sup>a</sup> and the number of traverse points	EPA test method 1 or 1A in appendix A to part 60.
2. Determining the velocity and volumetric flow rate	EPA test method 2, 2A, 2C, 2D, 2F, or 2G, as appropriate, in appendix A to part 60.
3. Determining the gas molecular weight used for flow rate determination	EPA test method 3, 3A, 3B, as appropriate, in appendix A to part 60.

For * * *	You must use * * *
4. Measuring the moisture content of the stack gas	EPA test method 4 in appendix A to part 60.
5. Measuring the PM emissions	EPA test method 5A in appendix A to part 60.
6. Measuring the PAH emissions	EPA test method 23 <sup>b</sup> with analysis by SW-846 Method 8270D.

<sup>a</sup> The sampling locations must be located at the outlet of the process equipment (or control device, if applicable), prior to any releases to the atmosphere.

<sup>b</sup> When using EPA Method 23, the toluene extraction step specified in section 3.1.2.1 of the method should be omitted.

**Table 4 of Subpart AAAAAAA of Part 63—Operating Limits**

If you comply with the emission limits using * * *	You must establish an operating value for * * *	And maintain <sup>a</sup> * * *
1. A thermal oxidizer	Combustion zone temperature	The 3-hour average combustion zone temperature at or above the operating value established as specified in § 63.11562(a)(2) and (b)(2).
2. A high-efficiency air filter or fiber bed filter	a. Inlet gas temperature <sup>b</sup> , and b. Pressure drop across device <sup>b</sup>	The 3-hour average inlet gas temperature within the operating range established as specified in § 63.11562(a)(2) and (b)(3). The 3-hour average pressure drop across the device within the approved operating range established as specified in § 63.11562(a)(2) and (b)(3).
3. An electrostatic precipitator (ESP)	Voltage <sup>c</sup> to the ESP	The 3-hour average ESP voltage <sup>c</sup> at or above the approved operating value established as specified in § 63.11562(a)(2) and (b)(3).
4. Process modifications (i.e., a control device is not required)	Appropriate process monitoring parameters. <sup>d</sup>	The monitoring parameters within the operating values established as specified in § 63.11562(c)(2).

<sup>a</sup> The 3-hour averaging period applies at all times other than startup and shutdown, as defined in § 63.2. Within 24 hours of a startup event, or 24 hours prior to a shutdown event, you must normalize the emissions that occur during the startup or shutdown, when there is no production rate available to assess compliance with the lb/ton of product emission limits, with emissions that occur when the process is operational. The emissions that occur during the startup or shutdown event must be included with the process emissions when assessing compliance with the emission limits specified in Tables 1 and 2 of this subpart.

<sup>b</sup> As an alternative to monitoring the inlet gas temperature and pressure drop, you can use a leak detection system that identifies when the filter media has been comprised.

<sup>c</sup> As an alternative to monitoring the ESP voltage, you can monitor the ESP instrumentation (e.g.light, alarm) that indicates when the ESP must be cleaned and maintain a record of the instrumentation on an hourly basis. Failure to service the ESP within one hour of the indication is an exceedance of the applicable monitoring requirements specified in § 63.11563(a).

<sup>d</sup> If you are not using a control device to comply with the emission limits specified in Table 2 of this subpart, the process parameters and corresponding parameter values that you select to demonstrate continuous compliance must correlate to the process emissions.

**Table 5 of Subpart AAAAAAA of Part 63—Applicability of General Provisions to Subpart AAAAAAA**

Citation	Subject	Applies to subpart AAAAAAA
§ 63.1	Applicability	Yes.
§ 63.2	Definitions	Yes.
§ 63.3	Units and Abbreviations	Yes.
§ 63.4	Prohibited Activities	Yes.
§ 63.5	Construction/Reconstruction	Yes.
§ 63.6(a)-(d)	Compliance With Standards and Maintenance Requirements	Yes.
§ 63.6(e)(1)(i)	Operation and Maintenance Requirements	No.
§ 63.6(e)(1)(ii)	Operation and Maintenance Requirements	No.
§ 63.6(e)(1)(iii)	Operation and Maintenance Requirements	Yes.
§ 63.6(e)(2)	[Reserved]	
§ 63.6(e)(3)	Startup, Shutdown, and Malfunction Plan	No. Subpart AAAAAAA does not require startup, shutdown, and malfunction plans.
§ 63.6(f)(1)	Compliance with Nonopacity Emission Standards	No. The emission limits apply at all times.
§ 63.6(f)(2)-(3)	Methods for Determining Compliance and Finding of Compliance	Yes.
§ 63.6(h)	Opacity/Visible Emission (VE) Standards	No. Subpart AAAAAAA does not contain opacity or VE standards.
§ 63.6(i)	Compliance Extension	Yes.
§ 63.6(j)	Presidential Compliance Exemption	Yes.
§ 63.7(a)-(d)	Performance Testing Requirements	Yes.
§ 63.7(e)(1)	Performance Testing Requirements	No. Subpart AAAAAAA specifies the conditions under which performance tests must be conducted.
§ 63.7(e)(2)-(4)	Conduct of Performance Tests and Data Reduction	Yes.
§ 63.7(f)-(h)	Use of Alternative Test Method; Data Analysis, Recordkeeping, and Reporting; and Waiver of Performance Tests	Yes.
§ 63.8(a)(1)	Applicability of Monitoring Requirements	Yes.
§ 63.8(a)(2)	Performance Specifications	No. Subpart AAAAAAA does not allow CEMS.
§ 63.8(a)(3)	[Reserved]	
§ 63.8(a)(4)	Monitoring with Flares	Yes.
§ 63.8(b)(1)	Conduct of Monitoring	Yes.
§ 63.8(b)(2)-(3)	Multiple Effluents and Multiple Monitoring Systems	Yes.
§ 63.8(c)(1)	Monitoring System Operation and Maintenance	Yes.
§ 63.8(c)(1)(i)	CMS maintenance	Yes.
§ 63.8(c)(1)(ii)	Spare Parts for CMS Malfunction	Yes.
§ 63.8(c)(1)(iii)	Compliance with Operation and Maintenance Requirements	No. Subpart AAAAAAA does not require startup, shutdown, and malfunction plans.
§ 63.8(c)(2)-(3)	Monitoring System Installation	Yes.
§ 63.8(c)(4)	CMS Requirements	No; § 63.11563 specifies the CMS requirements.

Citation	Subject	Applies to subpart AAAAAAA
§ 63.8(c)(5)	COMS Minimum Procedures	No. Subpart AAAAAAA does not contain opacity or VE standards.
§ 63.8(c)(6)	CMS Requirements	No; § 63.11563 specifies the CMS requirements.
§ 63.8(c)(7)-(8)	CMS Requirements	Yes.
§ 63.8(d)	CMS Quality Control	No; § 63.11563 specifies the CMS requirements.
§ 63.8(e)-(f)	CMS Performance Evaluation	Yes.
§ 63.8(g)(1)-(4)	Data Reduction Requirements	Yes.
§ 63.8(g)(5)	Data to Exclude from Averaging	No. All monitoring data must be included when calculating averages.
§ 63.9	Notification Requirements	Yes.
§ 63.10(a)	Recordkeeping and Reporting Requirements—Applicability	Yes.
§ 63.10(b)(1)	General Recordkeeping Requirements	Yes.
§ 63.10(b)(2)(i)-(iii)	General Recordkeeping Requirements	Yes.
§ 63.10(b)(2)(iv)-(v)	Records of Actions Taken During Startup, Shutdown, and Malfunction Plans	No. Subpart AAAAAAA does not require startup, shutdown, and malfunction plans.
§ 63.10(b)(2)(vi)-(xiv)	General Recordkeeping Requirements	Yes.
§ 63.10(c)(1)-(14)	Additional Recordkeeping Requirements for Sources with Continuous Monitoring Systems	Yes.
§ 63.10(c)(15)	Additional Recordkeeping Requirements for Sources with Continuous Monitoring Systems	No. Subpart AAAAAAA does not require startup, shutdown, and malfunction plans.
§ 63.10(d)(1)-(4)	General Reporting Requirements	Yes.
§ 63.10(d)(5)	Periodic Startup, Shutdown, and Malfunction Reports	No. Subpart AAAAAAA does not require startup, shutdown, and malfunction plans.
§ 63.10(e)	Additional Reporting Requirements for Sources with Continuous Monitoring Systems	Yes.
§ 63.10(f)	Waiver of Recordkeeping or Reporting Requirements	Yes.
§ 63.11	Control Device and Work Practice Requirements	Yes.
§ 63.12	State Authority and Delegations	Yes.
§ 63.13	Addresses of State Air Pollution Control Agencies and EPA Regional Offices	Yes.
§ 63.14	Incorporations by Reference	Yes.
§ 63.15	Availability of Information and Confidentiality	Yes.
§ 63.16	Performance Track Provisions	No.



**Attachment B**  
**To FESOP No.: F047-24313-00005**

[Downloaded from the eCFR on July 23, 2013]

**Electronic Code of Federal Regulations**

**Title 40: Protection of Environment**

**40 CFR 60, Subpart UU—Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture**

Source: 47 FR 34143, Aug. 6, 1982, unless otherwise noted.

**§ 60.470 Applicability and designation of affected facilities.**

(a) The affected facilities to which this subpart applies are each saturator and each mineral handling and storage facility at asphalt roofing plants; and each asphalt storage tank and each blowing still at asphalt processing plants, petroleum refineries, and asphalt roofing plants.

(b) Any saturator or mineral handling and storage facility under paragraph (a) of this section that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart. Any asphalt storage tank or blowing still that processes and/or stores asphalt used for roofing only or for roofing and other purposes, and that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart.

Any asphalt storage tank or blowing still that processes and/or stores only nonroofing asphalts and that commences construction or modification after May 26, 1981, is subject to the requirements of this subpart.

**§ 60.471 Definitions.**

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

*Afterburner (A/B)* means an exhaust gas incinerator used to control emissions of particulate matter.

*Asphalt processing* means the storage and blowing of asphalt.

*Asphalt processing plant* means a plant which blows asphalt for use in the manufacture of asphalt products.

*Asphalt roofing plant* means a plant which produces asphalt roofing products (shingles, roll roofing, siding, or saturated felt).

*Asphalt storage tank* means any tank used to store asphalt at asphalt roofing plants, petroleum refineries, and asphalt processing plants. Storage tanks containing cutback asphalts (asphalts diluted with solvents to reduce viscosity for low temperature applications) and emulsified asphalts (asphalts dispersed in water with an emulsifying agent) are not subject to this regulation.

*Blowing still* means the equipment in which air is blown through asphalt flux to change the softening point and penetration rate.

*Catalyst* means a substance which, when added to asphalt flux in a blowing still, alters the penetrating-softening point relationship or increases the rate of oxidation of the flux.

*Coating blow* means the process in which air is blown through hot asphalt flux to produce coating asphalt. The coating blow starts when the air is turned on and stops when the air is turned off.

*Electrostatic precipitator (ESP)* means an air pollution control device in which solid or liquid particulates in a gas stream are charged as they pass through an electric field and precipitated on a collection surface.

*High velocity air filter (HVAF)* means an air pollution control filtration device for the removal of sticky, oily, or liquid aerosol particulate matter from exhaust gas streams.

*Mineral handling and storage facility* means the areas in asphalt roofing plants in which minerals are unloaded from a carrier, the conveyor transfer points between the carrier and the storage silos, and the storage silos.

*Saturator* means the equipment in which asphalt is applied to felt to make asphalt roofing products. The term saturator includes the saturator, wet looper, and coater.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

**§ 60.472 Standards for particulate matter.**

(a) On and after the date on which § 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any saturator:

(1) Particulate matter in excess of:

(i) 0.04 kg/Mg (0.08 lb/ton) of asphalt shingle or mineral-surfaced roll roofing produced, or

(ii) 0.04 kg/Mg (0.08 lb/ton) of saturated felt or smooth-surfaced roll roofing produced;

(2) Exhaust gases with opacity greater than 20 percent; and

(3) Any visible emissions from a saturator capture system for more than 20 percent of any period of consecutive valid observations totaling 60 minutes. Saturators that were constructed before November 18, 1980, and that have not been reconstructed since that date and that become subject to these standards through modification are exempt from the visible emissions standard. Saturators that have been newly constructed or reconstructed since November 18, 1980 are subject to the visible emissions standard.

(b) On and after the date on which § 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blowing still:

(1) Particulate matter in excess of 0.67 kg/Mg (1.3 lb/ton) of asphalt charged to the still when a catalyst is added to the still; and

(2) Particulate matter in excess of 0.71 kg/Mg (1.4 lb/ton) of asphalt charged to the still when a catalyst is added to the still and when No. 6 fuel oil is fired in the afterburner; and

(3) Particulate matter in excess of 0.60 kg/Mg (1.2 lb/ton) of asphalt charged to the still during blowing without a catalyst; and

(4) Particulate matter in excess of 0.64 kg/Mg (1.3 lb/ton) of asphalt charged to the still during blowing without a catalyst and when No. 6 fuel oil is fired in the afterburner; and

(5) Exhaust gases with an opacity greater than 0 percent unless an opacity limit for the blowing still when fuel oil is used to fire the afterburner has been established by the Administrator in accordance with the procedures in § 60.474(g).

(c) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any asphalt storage tank exhaust gases with opacity greater than 0 percent, except for one consecutive 15-minute period in any 24-hour period when the transfer lines are being

blown for clearing. The control device shall not be bypassed during this 15-minute period. If, however, the emissions from any asphalt storage tank(s) are ducted to a control device for a saturator, the combined emissions shall meet the emission limit contained in paragraph (a) of this section during the time the saturator control device is operating. At any other time the asphalt storage tank(s) must meet the opacity limit specified above for storage tanks.

(d) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any mineral handling and storage facility emissions with opacity greater than 1 percent.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

#### **§ 60.473 Monitoring of operations.**

(a) The owner or operator subject to the provisions of this subpart, and using either an electrostatic precipitator or a high velocity air filter to meet the emission limit in § 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature of the gas at the inlet of the control device. The temperature monitoring instrument shall have an accuracy of  $\pm 15^{\circ}\text{C}$  ( $\pm 25^{\circ}\text{F}$ ) over its range.

(b) The owner or operator subject to the provisions of this subpart and using an afterburner to meet the emission limit in § 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature in the combustion zone of the afterburner. The monitoring instrument shall have an accuracy of  $\pm 10^{\circ}\text{C}$  ( $\pm 18^{\circ}\text{F}$ ) over its range.

(c) An owner or operator subject to the provisions of this subpart and using a control device not mentioned in paragraphs (a) or (b) of this section shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may require continuous monitoring and will determine the process parameters to be monitored.

(d) The industry is exempted from the quarterly reports required under § 60.7(c). The owner/operator is required to record and report the operating temperature of the control device during the performance test and, as required by § 60.7(d), maintain a file of the temperature monitoring results for at least two years.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

#### **§ 60.474 Test methods and procedures.**

(a) For saturators, the owner or operator shall conduct performance tests required in § 60.8 as follows:

(1) If the final product is shingle or mineral-surfaced roll roofing, the tests shall be conducted while 106.6-kg (235-lb) shingle is being produced.

(2) If the final product is saturated felt or smooth-surfaced roll roofing, the tests shall be conducted while 6.8-kg (15-lb) felt is being produced.

(3) If the final product is fiberglass shingle, the test shall be conducted while a nominal 100-kg (220-lb) shingle is being produced.

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

(c) The owner or operator shall determine compliance with the particulate matter standards in § 60.472 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (C_s Q_{sd}) / (PK)$$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton).

$c_s$  =concentration of particulate matter, g/dscm (gr/dscf).

$Q_{sd}$  =volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=asphalt roofing production rate or asphalt charging rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg [7000 (gr/lb)].

(2) Method 5A shall be used to determine the particulate matter concentration ( $c_s$ ) and volumetric flow rate ( $Q_{sd}$ ) of the effluent gas. For a saturator, the sampling time and sample volume for each run shall be at least 120 minutes and 3.00 dscm (106 dscf), and for the blowing still, at least 90 minutes or the duration of the coating blow or non-coating blow, whichever is greater, and 2.25 dscm (79.4 dscf).

(3) For the saturator, the asphalt roofing production rate (P) for each run shall be determined as follows: The amount of asphalt roofing produced on the shingle or saturated felt process lines shall be obtained by direct measurement. The asphalt roofing production rate is the amount produced divided by the time taken for the run.

(4) For the blowing still, the asphalt charging rate (P) shall be computed for each run using the following equation:

$$P=(Vd)/(K' \theta)$$

where:

P=asphalt charging rate to blowing still, Mg/hr (ton/hr).

V=volume of asphalt charged,  $m^3$  ( $ft^3$ ).

d=density of asphalt,  $kg/m^3$  ( $lb/ft^3$ ).

K'=conversion factor, 1000 kg/Mg (2000 lb/ton).

$\theta$ =duration of test run, hr.

(i) The volume (V) of asphalt charged shall be measured by any means accurate to within 10 percent.

(ii) The density (d) of the asphalt shall be computed using the following equation:

$$d = K_1 - K_2 T_i$$

Where:

d = Density of the asphalt,  $kg/m^3$  ( $lb/ft^3$ )

$K_1$  = 1056.1  $kg/m^3$  (metric units)

= 64.70  $lb/ft^3$  (English Units)

$K_2$  = 0.6176  $kg/(m^3 \text{ } ^\circ C)$  (metric units)

= 0.0694 lb/(ft<sup>3</sup> °F) (English Units)

T<sub>i</sub> = temperature at the start of the blow, °C (( °deg;F)

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

(d) The Administrator will determine compliance with the standards in § 60.472(a)(3) by using Method 22, modified so that readings are recorded every 15 seconds for a period of consecutive observations during representative conditions (in accordance with § 60.8(c)) totaling 60 minutes. A performance test shall consist of one run.

(e) The owner or operator shall use the monitoring device in § 60.473 (a) or (b) to monitor and record continuously the temperature during the particulate matter run and shall report the results to the Administrator with the performance test results.

(f) If at a later date the owner or operator believes that the emission limits in § 60.472(a) and (b) are being met even though one of the conditions listed in this paragraph exist, he may submit a written request to the Administrator to repeat the performance test and procedure outlined in paragraph (c) of this section.

(1) The temperature measured in accordance with § 60.473(a) is exceeding that measured during the performance test.

(2) The temperature measured in accordance with § 60.473(b) is lower than that measured during the performance test.

(g) If fuel oil is to be used to fire an afterburner used to control emissions from a blowing still, the owner or operator may petition the Administrator in accordance with § 60.11(e) of the General Provisions to establish an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. To obtain this opacity standard, the owner or operator must request the Administrator to determine opacity during an initial, or subsequent, performance test when fuel oil is used to fire the afterburner. Upon receipt of the results of the performance test, the Administrator will make a finding concerning compliance with the mass standard for the blowing still. If the Administrator finds that the facility was in compliance with the mass standard during the performance test but failed to meet the zero opacity standard, the Administrator will establish and promulgate in the FEDERAL REGISTER an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. When the afterburner is fired with natural gas, the zero percent opacity remains the applicable opacity standard.

[54 FR 6677, Feb. 14, 1989, as amended 54 FR 27016, June 27, 1989; 65 FR 61762, Oct. 17, 2000]

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

**Technical Support Document (TSD) for an Administrative Amendment to a  
Federally Enforceable State Operating Permit (FESOP)**

<b>Source Description and Location</b>
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Source Name:	Owens Corning Roofing & Asphalt, LLC
Source Location:	128 West 8th Street, Brookville, IN 47012
County:	Franklin
SIC Code:	2952 (Asphalt Felts and Coatings)
Operation Permit No.:	F047-24313-00005
Operation Permit Issuance Date:	February 11, 2008
Administrative Amendment No.:	047-33628-00005
Permit Reviewer:	Douglas Logan, P.E.

On September 10, 2013, the Office of Air Quality (OAQ) received an application from Owens Corning Roofing & Asphalt, LLC related to a modification to an existing stationary asphalt felt, coatings, and roofing products manufacturing source.

<b>Existing Approvals</b>
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The source was issued FESOP Renewal No. F047-24313-00005 on February 11, 2008. The source has since received the following approvals:

- (a) Administrative Amendment No.: 047-26894-00005, issued on October 16, 2008;
- (b) Administrative Amendment No.: 047-28905-00005, issued on February 16, 2010;
- (c) Minor Permit Revision No.: 047-30402-00005, issued on April 25, 2011;
- (d) Administrative Amendment No.: 047-32491-00005, issued on January 3, 2013; and
- (e) Significant Permit Revision No.: 047-32917-00005, issued on August 30, 2013.

<b>County Attainment Status</b>
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The source is located in Franklin County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.
<sup>1</sup> Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

- (a) **Ozone Standards**  
 Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Franklin County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM<sub>2.5</sub>**  
 Franklin County has been classified as attainment for PM<sub>2.5</sub>. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM<sub>2.5</sub> emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct PM<sub>2.5</sub> significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct PM<sub>2.5</sub>, NOx, and SO<sub>2</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.
- (c) **Other Criteria Pollutants**  
 Franklin County has been classified as attainment or unclassifiable in Indiana for PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

#### Fugitive Emissions

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

#### Status of Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed administrative amendment, after consideration of all enforceable limits established in the effective permits:

This PTE table is from the Technical Support Document for Significant Permit Revision No. 047-32917-00005, issued on August 30, 2013.

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Amendment <sup>1</sup> (tons/year)									
	PM	PM <sub>10</sub> <sup>2</sup>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e <sup>3</sup>	Total HAPs	Worst Single HAP
Asphalt Preheater #1 (EU 1.1)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1,751	0.02	0.02 (Hexane)
Asphalt Preheater #2 (EU 1.2)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1,751	0.02	0.02 (Hexane)
Filler Heater (EU 1.3)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1,751	0.02	0.02 (Hexane)
Hot Oil Heater (EU1.4)	0.13	0.16	0.14	4.57	1.31	0.05	0.76	1,471	0.02	0.02 (Hexane)
Hot Oil Heater (EU-NOH)	0.01	0.05	0.05	4.12E-03	0.34	0.04	0.58	826	0.01	0.01 (Hexane)
Asphalt Tank #1 (EU 2.1)	3.59 <sup>4</sup>	3.59 <sup>4</sup>	3.59 <sup>4</sup>	0.51	--	3.59 <sup>2</sup>	2.01	--	negl.	negl.
Adhesive Tank #7 (EU 2.2)	0.07 <sup>4</sup>	0.07 <sup>4</sup>	0.07 <sup>4</sup>	0.02	--	0.07 <sup>2</sup>	0.09	--		--
Adhesive Tank #7A (EU2.3)	0.10 <sup>4</sup>	0.10 <sup>4</sup>	0.10 <sup>4</sup>	0.02	--	0.10 <sup>2</sup>	0.09	--	--	--

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Amendment <sup>1</sup> (tons/year)									
	PM	PM10 <sup>2</sup>	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e <sup>3</sup>	Total HAPs	Worst Single HAP
Filler Silo #1 (EU4.1)	0.96 <sup>4</sup>	0.96 <sup>4</sup>	0.96 <sup>4</sup>	--	--	--	--	--	--	--
Filler Silo #2 (EU4.2)	0.48 <sup>4</sup>	0.48 <sup>4</sup>	0.48 <sup>4</sup>	--	--	--	--	--	--	--
Filler Silo #4 (EU 4.3)	0.96 <sup>4</sup>	0.96 <sup>4</sup>	0.96 <sup>4</sup>	--	--	--	--	--	--	--
Parting Agent Silo #5 (EU 4.4)	0.48 <sup>4</sup>	0.48 <sup>4</sup>	0.48 <sup>4</sup>	--	--	--	--	--	--	--
Filler Silo #3 (EU 4.6)	0.48 <sup>4</sup>	0.48 <sup>4</sup>	0.48 <sup>4</sup>	--	--	--	--	--	--	--
Filler Upper Surge Hopper (EU 4.7)	0.83 <sup>4</sup>	0.83 <sup>4</sup>	0.83 <sup>4</sup>	--	--	--	--	--	--	--
Filler Lower Surge Hopper (EU 4.8)	0.39 <sup>1</sup>	0.39 <sup>4</sup>	0.39 <sup>4</sup>	--	--	--	--	--	--	--
Surfacing Material Silos #1-#6 (EU 4.9)	11.56 <sup>1</sup>	11.56 <sup>1</sup>	11.56 <sup>1</sup>	--	--	--	--	--	--	--
Surfacing Material Silo #7 (EU4.10)	1.80 <sup>4</sup>	1.80 <sup>1</sup>	1.80 <sup>1</sup>	--	--	--	--	--	--	--
Parting Agent Use Bin (EU 4.5)	7.05 <sup>4</sup>	7.05 <sup>4</sup>	7.05 <sup>4</sup>	--	--	--	--	--	--	--
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--
Material Surfacing Applicator (EU 7.1)				--	--	0.68 <sup>5</sup>	--	--	--	--
Filler Hopper (EU-NFH)	0.22 <sup>4</sup>	0.22 <sup>4</sup>	0.22 <sup>4</sup>	--	--	--	--	--	--	--
Asphalt Filler Mixer (EU 5.1)	0.32 <sup>4</sup>	0.32 <sup>4</sup>	0.14 <sup>4</sup>	0.51	--	1.30 <sup>5</sup>	2.01	--	--	--
Asphalt Coater & Surge Tank (EU 6.1)	7.04 <sup>4</sup>	7.04 <sup>4</sup>	7.04 <sup>4</sup>	1.60	--	20.67 <sup>5</sup>	1.14	--	0.087	0.07 (1,1,1-TCE)
Cooling Section (EU 7.2)	15.90 <sup>1</sup>	15.90 <sup>1</sup>	15.90 <sup>1</sup>	--	--	4.54 <sup>5</sup>	--	--	0.13	0.13 (1,1,1-TCE)
Building Ventilators (ID# 93)	8.69 <sup>1</sup>	8.69 <sup>1</sup>	8.69 <sup>1</sup>	--	--	22.66 <sup>5</sup>	--	--	0.63	0.49 (Mn)
Insignificant Activities										
0.58 MMBtu/hr Furnace	4.73E-03	1.89E-02	1.89E-02	1.49E-03	2.49E-01	1.37E-02	2.09E-01	301	4.70E-03	4.48E-03 (Hexane)
(16) 0.075 MMBtu/hr Furnaces	9.79E-03	3.92E-02	3.92E-02	3.09E-03	4.84E-01	2.83E-02	2.06E-01	622	9.73E-03	9.28E-03 (Hexane)
0.25 MMBtu/hr Boiler	2.04E-03	8.16E-03	8.16E-03	6.44E-04	1.07E-01	5.90E-03	9.02E-02	130	2.03E-03	1.93E-03 (Hexane)
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73	0.29	2.15	3,672	--	--
Degreasers	--	--	--	--	--	0.97	--	--	1.94E-03	1.94E-03 (NI)
Granule and Sand Reclaim System (EU 6.2) <sup>6</sup>	2.48E-03	2.48E-03	2.48E-03	--	--	--	--	--	--	--
Hot Oil Loss (ID #92) <sup>6</sup>	--	--	--	--	--	1.37	--	--	1.37	1.37 (NI)



Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Amendment <sup>1</sup> (tons/year)									
	PM	PM10 <sup>2</sup>	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e <sup>3</sup>	Total HAPs	Worst Single HAP
VOC emissions from pumps, valves, flanges, etc. (ID# 92) <sup>6</sup>	--	--	--	--	--	1.40E-02	--	--	1.40E-02	1.40E-02 (NI)
Material Unloading (ID# 94) <sup>6</sup>	2.55E-02	2.55E-02	2.55E-02	--	--	--	--	--	--	--
Ink Jet Printing <sup>6</sup>	--	--	--	--	--	3.58	--	--	--	--
Adhesive Mix Tank (EU-NMT)	3.47E-03	3.42E-03	1.51E-03	1.32E-02	--	1.40E-02	5.25E-02	--	--	--
Other <sup>7</sup>	5.00	5.00	5.00	5.00	5.00	5.00	5.00	1000	2.50	2.50 (NI)
<b>Total PTE of Entire Source</b>	<b>68.02</b>	<b>68.37</b>	<b>68.29</b>	<b>28.58</b>	<b>15.92</b>	<b>65.52</b>	<b>17.09</b>	<b>13,273</b>	<b>4.85</b>	<b>&lt;10</b>
Title V Major Source Thresholds <sup>2</sup>	N/A	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds <sup>2</sup>	250	250	250	250	250	250	250	100,000	N/A	N/A
negl. = negligible NI = not indicated <sup>1</sup> - These emissions are based upon FESOP SPR 041-32917-00005 <sup>2</sup> - 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". <sup>3</sup> - 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>4</sup> - PM, PM10, and PM2.5 emission limits have been established in order to render the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable. See below for detailed emission limits. <sup>5</sup> - VOC emission limits have been established in order to render the requirements of 326 IAC 2-7 (Part 70) not applicable. See below for detailed emission limits. <sup>6</sup> - Emissions provided by the Permittee. <sup>7</sup> - Other insignificant activities includes the sum of miscellaneous trivial and insignificant activities (i.e., safety flame purging, VOC and HAP-containing vessels, machining where an aqueous coolant is used, other cleaners and solvents, brazing equipment, soldering equipment, less than 625 pounds welding consumables, less than 3,400 inches/hour of stock 1" thickness or less that is cut, vessel degassing, blowdown, baghouse bag replacement, laboratory activities, equipment powered by internal combustion engines, parting agent recycle system (EU 4.4R), Straco tank, roll coating application of adhesive (including adhesive use tanks #1 and #2, adhesive melt tanks #1 and #2, laminating adhesive use tank, laminating adhesive melt tank, adhesive applicator pan, and laminating adhesive applicator pan)).										

- (a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no attainment regulated pollutant is emitted at a rate of two hundred fifty (250) tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).
- (b) This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the unlimited potential to emit HAPs are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

#### Description of Administrative Amendment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Owens Corning Roofing & Asphalt, LLC on September 10, 2013, relating to the addition of an insignificant activity, a Finishing Layer Application process for asphalt roofing.

The administrative amendment includes the following equipment for the Finishing Layer Application process:

- (1) Two (2) 100-gallon raw material storage tanks
- (2) 150 gallon mixing tank,
- (3) 200 gallon holding tank,
- (4) Four (4) pumps,
- (5) Twelve (12) application nozzles, and
- (6) Associated piping.

#### Enforcement Issues

There are no pending enforcement actions related to this revision.

#### Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

#### Permit Level Determination – FESOP Administrative Amendment

The following table is used to determine the appropriate permit level under 326 IAC 2-8.11.1. This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Modification (US tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Finishing Layer Application	--	--	--	--	--	7.51	--	--	0.09	0.09 (toluene)
<b>Total PTE of Modification</b>	--	--	--	--	--	<b>7.51</b>	--	--	<b>0.09</b>	<b>0.09 (toluene)</b>

Pursuant to 326 IAC 2-8-10(a)(13), this FESOP is being modified through an administrative amendment because the proposed modification involves the addition an emissions unit, subject to 326 IAC 2-1.1-3, at the request of the applicant.

#### PTE of the Entire Source After Issuance of the 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 ~~strike through~~ values.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Asphalt Preheater #1 (EU 1.1)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02 (Hexane)
Asphalt Preheater #2 (EU 1.2)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02 (Hexane)
Filler Heater (EU)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
1.3)										(Hexane)
Hot Oil Heater (EU1.4)	0.13	0.16	0.14	4.57	1.31	0.05	0.76	1470.70	0.02	0.02 (Hexane)
Hot Oil Heater (EU-NOH)	0.01	0.05	0.05	4.12E-03	0.34	0.04	0.58	826.17	0.01	0.01 (Hexane)
Asphalt Tank #1 (EU 2.1)	3.59 <sup>1</sup>	3.59 <sup>1</sup>	3.59 <sup>1</sup>	0.51	--	3.59 <sup>2</sup>	2.01	--	negl.	negl.
Adhesive Tank #7 (EU 2.2)	0.07 <sup>1</sup>	0.07 <sup>1</sup>	0.07 <sup>1</sup>	0.02	--	0.07 <sup>2</sup>	0.09	--		--
Adhesive Tank #7A (EU2.3)	0.10 <sup>1</sup>	0.10 <sup>1</sup>	0.10 <sup>1</sup>	0.02	--	0.10 <sup>2</sup>	0.09	--	--	--
Filler Silo #1 (EU4.1)	0.96 <sup>1</sup>	0.96 <sup>1</sup>	0.96 <sup>1</sup>	--	--	--	--	--	--	--
Filler Silo #2 (EU4.2)	0.48 <sup>1</sup>	0.48 <sup>1</sup>	0.48 <sup>1</sup>	--	--	--	--	--	--	--
Filler Silo #4 (EU 4.3)	0.96 <sup>1</sup>	0.96 <sup>1</sup>	0.96 <sup>1</sup>	--	--	--	--	--	--	--
Parting Agent Silo #5 (EU 4.4)	0.48 <sup>1</sup>	0.48 <sup>1</sup>	0.48 <sup>1</sup>	--	--	--	--	--	--	--
Filler Silo #3 (EU 4.6)	0.48 <sup>1</sup>	0.48 <sup>1</sup>	0.48 <sup>1</sup>	--	--	--	--	--	--	--
Filler Upper Surge Hopper (EU 4.7)	0.83 <sup>1</sup>	0.83 <sup>1</sup>	0.83 <sup>1</sup>	--	--	--	--	--	--	--
Filler Lower Surge Hopper (EU 4.8)	0.39 <sup>1</sup>	0.39 <sup>1</sup>	0.39 <sup>1</sup>	--	--	--	--	--	--	--
Surfacing Material Silos #1-#6 (EU 4.9)	11.56 <sup>1</sup>	11.56 <sup>1</sup>	11.56 <sup>1</sup>	--	--	--	--	--	--	--
Surfacing Material Silo #7 (EU4.10)	1.80 <sup>1</sup>	1.80 <sup>1</sup>	1.80 <sup>1</sup>	--	--	--	--	--	--	--
Parting Agent Use Bin (EU 4.5)	7.05 <sup>1</sup>	7.05 <sup>1</sup>	7.05 <sup>1</sup>	--	--	--	--	--	--	--
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--
Material Surfacing Applicator (EU 7.1)				--	--	0.68 <sup>2</sup>	--	--	--	--
Filler Hopper (EU- NFH)	0.22 <sup>1</sup>	0.22 <sup>1</sup>	0.22 <sup>1</sup>	--	--	--	--	--	--	--
Asphalt Filler Mixer (EU 5.1)	0.32 <sup>1</sup>	0.32 <sup>1</sup>	0.14 <sup>1</sup>	0.51	--	1.30 <sup>2</sup>	2.01	--	--	--
Asphalt Coater & Surge Tank (EU 6.1)	7.04 <sup>1</sup>	7.04 <sup>1</sup>	7.04 <sup>1</sup>	1.60	--	20.67 <sup>2</sup>	1.14	--	0.087	0.07 (1,1,1- TCE)
Cooling Section (EU 7.2)	15.90 <sup>1</sup>	15.90 <sup>1</sup>	15.90 <sup>1</sup>	--	--	4.54 <sup>2</sup>	--	--	0.13	0.13 (1,1,1- TCE)
Building Ventilators (ID# 93)	8.69 <sup>1</sup>	8.69 <sup>1</sup>	8.69 <sup>1</sup>	--	--	22.66 <sup>2</sup>	--	--	0.63	0.49 (Mn)
Insignificant Activities										
0.58 MMBtu/hr Furnace	4.73E-03	1.89E-02	1.89E-02	1.49E-03	2.49E-01	1.37E-02	2.09E-01	3.01E+02	4.70E-03	4.48E-03 (Hexane)
(16) 0.075 MMBtu/hr	9.79E-03	3.92E-02	3.92E-02	3.09E-03	4.84E-01	2.83E-02	2.06E-01	6.22E+02	9.73E-03	9.28E-03 (Hexane)

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Furnaces										
0.25 MMBtu/hr Boiler	2.04E-03	8.16E-03	8.16E-03	6.44E-04	1.07E-01	5.90E-03	9.02E-02	1.30E+02	2.03E-03	1.93E-03 (Hexane)
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73	0.29	2.15	3671.50	--	--
Degreasers	--	--	--	--	--	0.97	--	--	1.94E-03	1.94E-03 (NI)
Granule and Sand Reclaim System (EU 6.2) <sup>3</sup>	2.48E-03	2.48E-03	2.48E-03	--	--	--	--	--	--	--
Hot Oil Loss (ID #92) <sup>3</sup>	--	--	--	--	--	1.37	--	--	1.37	1.37 (NI)
VOC emissions from pumps, valves, flanges, etc. (ID# 92) <sup>3</sup>	--	--	--	--	--	1.40E-02	--	--	1.40E-02	1.40E-02 (NI)
Material Unloading (ID# 94) <sup>3</sup>	2.55E-02	2.55E-02	2.55E-02	--	--	--	--	--	--	--
Ink Jet Printing <sup>3</sup>	--	--	--	--	--	3.58	--	--	--	--
Adhesive Mix Tank (EU-NMT)	3.47E-03	3.42E-03	1.51E-03	1.32E-02	--	1.40E-02	5.25E-02	--	--	--
<b>Finishing Layer Application</b>	--	--	--	--	--	<b>7.51</b>	--	--	<b>0.09</b>	<b>0.09 (toluene)</b>
Other <sup>4</sup>	5.00	5.00	5.00	5.00	5.00	5.00	5.00	1000.00	2.50	2.50 (NI)
Total PTE of Entire Source	68.02	68.37	68.29	28.58	15.92	<del>65.52</del> <b>73.03</b>	17.09	13,273.3	<del>4.85</del> <b>4.94</b>	<10
Title V Major Source Thresholds**	N/A	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	250	250	250	250	250	100,000	N/A	N/A
negl. = negligible NI = not indicated *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>1</sup> PM, PM10, and PM2.5 emission limits have been established in order to render the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable. See below for detailed emission limits. <sup>2</sup> VOC emission limits have been established in order to render the requirements of 326 IAC 2-7 (Part 70) not applicable. See below for detailed emission limits. <sup>3</sup> Emissions provided by the Permittee. <sup>4</sup> Other insignificant activities includes the sum of miscellaneous trivial and insignificant activities (i.e., safety flame purging, VOC and HAP-containing vessels, machining where an aqueous coolant is used, other cleaners and solvents, brazing equipment, soldering equipment, less than 625 pounds welding consumables, less than 3,400 inches/hour of stock 1" thickness or less that is cut, vessel degassing, blowdown, baghouse bag replacement, laboratory activities, equipment powered by internal combustion engines, parting agent recycle system (EU 4.4R), Straco tank, roll coating application of adhesive (including adhesive use tanks #1 and #2, adhesive melt tanks #1 and #2, laminating adhesive use tank, laminating adhesive melt tank, adhesive applicator pan, and laminating adhesive applicator pan)).										

The table below summarizes the potential to emit of the entire source after issuance of this administrative amendment, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP administrative amendment, and only to the extent that the effect of the control equipment is made practically enforceable in the permit. Note: The table below was generated from the above table, with bold text un-bolded and strikethrough text deleted.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Asphalt Preheater #1 (EU 1.1)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02 (Hexane)
Asphalt Preheater #2 (EU 1.2)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02 (Hexane)
Filler Heater (EU 1.3)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02 (Hexane)
Hot Oil Heater (EU1.4)	0.13	0.16	0.14	4.57	1.31	0.05	0.76	1470.70	0.02	0.02 (Hexane)
Hot Oil Heater (EU-NOH)	0.01	0.05	0.05	4.12E-03	0.34	0.04	0.58	826.17	0.01	0.01 (Hexane)
Asphalt Tank #1 (EU 2.1)	3.59 <sup>1</sup>	3.59 <sup>1</sup>	3.59 <sup>1</sup>	0.51	--	3.59 <sup>2</sup>	2.01	--	negl.	negl.
Adhesive Tank #7 (EU 2.2)	0.07 <sup>1</sup>	0.07 <sup>1</sup>	0.07 <sup>1</sup>	0.02	--	0.07 <sup>2</sup>	0.09	--		--
Adhesive Tank #7A (EU2.3)	0.10 <sup>1</sup>	0.10 <sup>1</sup>	0.10 <sup>1</sup>	0.02	--	0.10 <sup>2</sup>	0.09	--	--	--
Filler Silo #1 (EU4.1)	0.96 <sup>1</sup>	0.96 <sup>1</sup>	0.96 <sup>1</sup>	--	--	--	--	--	--	--
Filler Silo #2 (EU4.2)	0.48 <sup>1</sup>	0.48 <sup>1</sup>	0.48 <sup>1</sup>	--	--	--	--	--	--	--
Filler Silo #4 (EU 4.3)	0.96 <sup>1</sup>	0.96 <sup>1</sup>	0.96 <sup>1</sup>	--	--	--	--	--	--	--
Parting Agent Silo #5 (EU 4.4)	0.48 <sup>1</sup>	0.48 <sup>1</sup>	0.48 <sup>1</sup>	--	--	--	--	--	--	--
Filler Silo #3 (EU 4.6)	0.48 <sup>1</sup>	0.48 <sup>1</sup>	0.48 <sup>1</sup>	--	--	--	--	--	--	--
Filler Upper Surge Hopper (EU 4.7)	0.83 <sup>1</sup>	0.83 <sup>1</sup>	0.83 <sup>1</sup>	--	--	--	--	--	--	--
Filler Lower Surge Hopper (EU 4.8)	0.39 <sup>1</sup>	0.39 <sup>1</sup>	0.39 <sup>1</sup>	--	--	--	--	--	--	--
Surfacing Material Silos #1-#6 (EU 4.9)	11.56 <sup>1</sup>	11.56 <sup>1</sup>	11.56 <sup>1</sup>	--	--	--	--	--	--	--
Surfacing Material Silo #7 (EU4.10)	1.80 <sup>1</sup>	1.80 <sup>1</sup>	1.80 <sup>1</sup>	--	--	--	--	--	--	--
Parting Agent Use Bin (EU 4.5)	7.05 <sup>1</sup>	7.05 <sup>1</sup>	7.05 <sup>1</sup>	--	--	--	--	--	--	--
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--
Material Surfacing Applicator (EU 7.1)				--	--	0.68 <sup>2</sup>	--	--	--	--
Filler Hopper (EU-NFH)	0.22 <sup>1</sup>	0.22 <sup>1</sup>	0.22 <sup>1</sup>	--	--	--	--	--	--	--
Asphalt Filler Mixer (EU 5.1)	0.32 <sup>1</sup>	0.32 <sup>1</sup>	0.14 <sup>1</sup>	0.51	--	1.30 <sup>2</sup>	2.01	--	--	--
Asphalt Coater & Surge Tank (EU 6.1)	7.04 <sup>1</sup>	7.04 <sup>1</sup>	7.04 <sup>1</sup>	1.60	--	20.67 <sup>2</sup>	1.14	--	0.087	0.07 (1,1,1-TCE)
Cooling Section (EU 7.2)	15.90 <sup>1</sup>	15.90 <sup>1</sup>	15.90 <sup>1</sup>	--	--	4.54 <sup>2</sup>	--	--	0.13	0.13 (1,1,1-TCE)
Building Ventilators (ID#)	8.69 <sup>1</sup>	8.69 <sup>1</sup>	8.69 <sup>1</sup>	--	--	22.66 <sup>2</sup>	--	--	0.63	0.49 (Mn)

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
93)										
Insignificant Activities										
0.58 MMBtu/hr Furnace	4.73E-03	1.89E-02	1.89E-02	1.49E-03	2.49E-01	1.37E-02	2.09E-01	3.01E+02	4.70E-03	4.48E-03 (Hexane)
(16) 0.075 MMBtu/hr Furnaces	9.79E-03	3.92E-02	3.92E-02	3.09E-03	4.84E-01	2.83E-02	2.06E-01	6.22E+02	9.73E-03	9.28E-03 (Hexane)
0.25 MMBtu/hr Boiler	2.04E-03	8.16E-03	8.16E-03	6.44E-04	1.07E-01	5.90E-03	9.02E-02	1.30E+02	2.03E-03	1.93E-03 (Hexane)
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73	0.29	2.15	3671.50	--	--
Degreasers	--	--	--	--	--	0.97	--	--	1.94E-03	1.94E-03 (NI)
Granule and Sand Reclaim System (EU 6.2) <sup>3</sup>	2.48E-03	2.48E-03	2.48E-03	--	--	--	--	--	--	--
Hot Oil Loss (ID #92) <sup>3</sup>	--	--	--	--	--	1.37	--	--	1.37	1.37 (NI)
VOC emissions from pumps, valves, flanges, etc. (ID# 92) <sup>3</sup>	--	--	--	--	--	1.40E-02	--	--	1.40E-02	1.40E-02 (NI)
Material Unloading (ID# 94) <sup>3</sup>	2.55E-02	2.55E-02	2.55E-02	--	--	--	--	--	--	--
Ink Jet Printing <sup>3</sup>	--	--	--	--	--	3.58	--	--	--	--
Adhesive Mix Tank (EU-NMT)	3.47E-03	3.42E-03	1.51E-03	1.32E-02	--	1.40E-02	5.25E-02	--	--	--
Finishing Layer Application	--	--	--	--	--	7.51	--	--	0.09	0.09 (toluene)
Other <sup>4</sup>	5.00	5.00	5.00	5.00	5.00	5.00	5.00	1000.00	2.50	2.50 (NI)
<b>Total PTE of Entire Source</b>	<b>68.02</b>	<b>68.37</b>	<b>68.29</b>	<b>28.58</b>	<b>15.92</b>	<b>73.03</b>	<b>17.09</b>	<b>13,273.3</b>	<b>4.94</b>	<b>&lt;10</b>
Title V Major Source Thresholds**	N/A	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	250	250	250	250	250	100,000	N/A	N/A

negl. = negligible

NI = not indicated

\*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>1</sup>PM, PM10, and PM2.5 emission limits have been established in order to render the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable. See below for detailed emission limits.

<sup>2</sup>VOC emission limits have been established in order to render the requirements of 326 IAC 2-7 (Part 70) not applicable. See below for detailed emission limits.

<sup>3</sup>Emissions provided by the Permittee.

<sup>4</sup>Other insignificant activities includes the sum of miscellaneous trivial and insignificant activities (i.e., safety flame purging, VOC and HAP-containing vessels, machining where an aqueous coolant is used, other cleaners and solvents, brazing equipment, soldering equipment, less than 625 pounds welding consumables, less than 3,400 inches/hour of stock 1" thickness or less that is cut, vessel degassing, blowdown, baghouse bag replacement, laboratory activities, equipment powered by internal combustion engines, parting agent recycle system (EU 4.4R), Straco tank, roll coating application of adhesive (including adhesive use tanks #1 and #2, adhesive melt tanks #1 and #2, laminating adhesive use tank, laminating adhesive melt tank, adhesive applicator pan, and laminating adhesive applicator pan)).

(a) FESOP Status

This modification to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP).

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the source shall continue to comply with the emission limits in FESOP SPR No. 047-32917-00005. Compliance with these limits, combined with the potential to emit from other units at this source, shall limit the source-wide total potential to emit of PM, PM10, PM2.5 and VOC to less than one hundred (100) tons per twelve (12) consecutive month period, each. Therefore, the requirements of 326 IAC 2-7 (Part 70) are not applicable.

(b) PSD Minor Source

This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Compliance with the PM, PM10, and PM2.5 limits listed above in FESOP SPR No. 047-32917-00005, combined with the potential to emit PM, PM10, and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM, PM10, and PM2.5 to less than 250 tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

<b>Federal Rule Applicability Determination</b>
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New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Asphalt Processing and Asphalt Roofing Manufacture, 40 CFR 60.470, Subpart UU (326 IAC 12), are not included in this administrative amendment, because the Finishing Layer Application Process is not a saturator or a mineral handling and storage facility at an asphalt roofing plant.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs): for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63.8680, Subpart LLLLL, are not included in this administrative amendment, because this source is not a major source of HAP emissions.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs): Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, 40 CFR 63.11169, Subpart HHHHHH, are not included in this administrative amendment, because the Finishing Layer Application process does not involve paint stripping with methylene chloride or spray application of coatings using hand-held devices.
- (d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing for Area Sources, 40 CFR 63.11559, Subpart AAAAAA, are not included in this administrative amendment, because the Finishing Layer Application process is not an affected source under the subpart.
- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) \ for Area Sources: Chemical Preparations Industry, 40 CFR 63.11579, Subpart BBBB, are not included in this administrative amendment, because the Finishing Layer Application process does

not process, use, or generate material containing benzene, methylene chloride, or compounds of cadmium, chromium, lead, and/or nickel.

#### Compliance Assurance Monitoring (CAM)

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

<b>State Rule Applicability Determination</b>
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The following is a discussion of state rule applicability to this administrative amendment:

- (a) 326 IAC 2-8-4 (FESOP)  
This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP). See PTE of the Entire Source After Issuance of the FESOP Administrative Amendment Section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))  
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See PTE of the Entire Source After Issuance of the FESOP Administrative Amendment Section above.
- (c) 326 IAC 2-6 (Emission Reporting)  
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 326 IAC 5-1 (Opacity Limitations)  
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
- (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)  
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
- (f) 326 IAC 12 (New Source Performance Standards)  
See Federal Rule Applicability Section of this TSD.
- (g) 326 IAC 20 (Hazardous Air Pollutants)  
See Federal Rule Applicability Section of this TSD.



#### Finishing Layer Application Process

- (h) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
The Finishing Layer Application process does not generate particulate matter with an aerodynamic diameter less than 100  $\mu\text{m}$ , therefore the requirements of 326 IAC 6-3-2(d) are not applicable.
- (i) 326 IAC 8-1-6 (VOC Rules; New Facilities; General Reduction Requirements)  
Pursuant to 326 IAC 8-1-6(1), this requirement is not applicable to the Finishing Layer Application process because the potential emissions of the facility are less than 25 tons of VOC per year.
- (j) 326 IAC 8-6 (VOC Rules; Organic Solvent Emission Limitations)  
Pursuant to 326 IAC 8-6-1, this requirement is not applicable to the Finishing Layer Application process because the potential emissions of the source are less than 100 tons of VOC per year.
- (k) 326 IAC 8-9 (VOC Rules; Volatile Organic Liquid Storage Vessels)  
Pursuant to 326 IAC 8-9-1(a), this requirement is not applicable to the Finishing Layer Application process because the source is not located in Clark, Floyd, Lake, or Porter County.
- (l) There are no other Article 8 rules applicable to this administrative amendment.

<b>Compliance Determination, Monitoring and Testing Requirements</b>
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- (a) There are no new compliance determination or monitoring requirements applicable to this administrative amendment.
- (b) There are no new testing requirements applicable to this administrative amendment.

<b>Proposed Changes</b>
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The changes listed below have been made to FESOP Renewal No. F047-24313-00005. These changes may include Title I changes (e.g. changes that add or modify synthetic minor emission limits). Deleted language appears as ~~strike through~~ text and new language appears as **bold** text:

- (1) The permit has been revised as follows:

<b>A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]</b>
--

**This stationary source also includes the following insignificant activities:**

- (a) **Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British Thermal Units per hour. This includes one (1) 0.58 Million British Thermal Units per hour rated furnace, sixteen (16) 0.075 Million British Thermal Units per hour individually rated furnaces, and one (1) 0.25 Million British Thermal Units per hour rated boiler installed after 1983. [326 IAC 6-2-4]**
- (b) **Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, including two cold cleaning parts washers installed in 2000. [326 IAC 8-3-2]**

<b>A.34 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]</b>
--

**This stationary source also includes the following insignificant activities:**

- (ba) **Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) British Thermal Units per hour.**

- (eb) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 British Thermal Units per hour, except where total capacity of equipment operated by one stationary source exceeds 2,000,000 British Thermal Units per hour.
- (ec) Combustion source flame safety purging on startup.
- (ed) The following VOC and HAP storage containers:
  - (1) storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons;
  - (2) vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (fe) Machining where an aqueous cutting coolant continuously floods the machining interface.
- ~~(g) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, including two cold cleaning parts washers installed in 2000. [326 IAC 8-3-2]~~
- (hf) Cleaners and solvents characterized as follows:
  - (1) having a vapor pressure equal to or less than 2 kilopascal (kPa); 15 millimeter of mercury; or 0.3 pounds per square inch measured at 38 degrees C (100 °F) or;
  - (2) having a vapor pressure equal to or less than 0.7 kilopascal (kPa); 5 millimeter of mercury; or 0.1 pounds per square inch measured at 20 °C (68 °F);the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.
- (ig) The following equipment related to manufacturing activities not resulting in the emission of hazardous air pollutants (HAPs); brazing equipment, cutting torches, soldering equipment, welding equipment, including the total use of less than 625 pounds of welding consumables per day and less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness of less is cut.
- (jh) Closed loop heating and cooling systems.
- (ki) Noncontact cooling tower systems with forced and induced draft not regulated under NESHAP.
- (lj) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
- (mk) Process vessel degassing and cleaning to prepare for internal repairs.
- (nl) Paved and unpaved roads and parking lots with public access, identified as ID# 91.
- (em) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (pn) On-site fire and emergency response training approved by the department.
- (qo) A laboratory as defined in 326 IAC 2-7-1(21)(D).
- (rp) Additional activities and categories with PM/PM10 emissions below the insignificant

thresholds of five (5) pounds per hour or twenty-five (25) pounds per day and VOC emissions below three (3) pounds per hour or fifteen (15) pounds per day:

- (1) one (1) granule and sand reclaim system, identified as EU 6.2, with a maximum capacity of 4 tons of granules and sand per day, exhausting through one stack identified as 71A. The potential emissions from this activity are calculated to be 0.0136 pounds per day;
- (2) one (1) parting agent recycle system rated at 27 thousand cubic feet per hour and identified as EU 4.4R;
- (3) VOC emissions from pumps, valves, flanges, etc., identified as ID# 92;
- (4) fugitive particulate matter emissions from material unloading, identified as ID# 94;
- (5) ink jet printer;
- (6) application of adhesive to asphalt coated product, using up to one (1) ton per hour adhesive, including:
  - (A) adhesive use tank #1;
  - (B) adhesive melt tank #1;
  - (C) adhesive melt tank #2;
  - (D) adhesive use tank #2;
  - (E) laminating adhesive use tank;
  - (F) laminating adhesive melt tank;
  - (G) adhesive applicator pan; and
  - (H) laminating adhesive applicator pan.
- (7) one (1) 180 gallon capacity adhesive mix tank identified as EU-NMT, installed in 2006, with particulate matter controlled by fiber bed filter, and exhausting to one stack identified as S-NMT; and
- (8) one (1) 545 gallon capacity Straco tank, installed in 2006, and used for re-circulating hot oil around coating surge tank for heating.

**(q) A Finishing Layer Application process, permitted in 2013, including the following**

- (1) Two (2) 100-gallon raw material storage tanks**
- (2) 150 gallon mixing tank,**
- (3) 200 gallon holding tank,**
- (4) Four (4) pumps,**
- (5) Twelve (12) application nozzles, and**
- (6) Associated piping.**

**A.45 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).

- (2) IDEM is changing the Section C Compliance Monitoring Condition to clearly describe when new monitoring for new and existing units must begin.

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

**(a) For new units:**

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

**(b) For existing units:**

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance ~~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 source modification shall be implemented when operation begins.~~

<b>Conclusion and Recommendation</b>
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Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on September 10, 2013.

The operation of this proposed amendment shall be subject to the conditions of the attached proposed FESOP Administrative Amendment No. 047-33628-00005. The staff recommends to the Commissioner that this FESOP Significant Permit Revision be approved.

<b>IDEM Contact</b>
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- (a) Questions regarding this proposed permit can be directed to Doug Logan at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5328 or toll free at 1-800-451-6027 extension 4-5328.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.in.gov/idem](http://www.in.gov/idem)

**TSD Appendix A: Emissions Calculations  
Source Summary - Unrestricted PTE**

**Company Name:** Owens Corning Roofing & Asphalt, LLC  
**Address City IN Zip:** 128 West 8th Street, Brookville, Indiana 47012  
**Administrative Amendment No:** 047-33628-00005  
**Reviewer:** Doug Logan  
**Date:** 11/5/2013

**Unrestricted Potential to Emit of this Modification**

Unit	Unrestricted PTE (ton/yr)									
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs (CO2e)	Total HAPs	Single Worst HAP
Finishing Layer Application Process	--	--	--	--	--	7.51	--	--	0.09	0.09
										Toluene

**Unrestricted Potential to Emit of the Source**

Unit	Unrestricted PTE (ton/yr)									
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs (CO2e)	Total HAPs	Single Worst HAP
Asphalt Preheater #1 (EU 1.1)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02
Asphalt Preheater #2 (EU 1.2)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02
Filler Heater (EU 1.3)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02
Hot Oil Heater (EU1.4)	0.13	0.16	0.14	4.57	1.31	0.05	0.76	1470.70	0.02	0.02
Hot Oil Heater (EU-NOH)	0.01	0.05	0.05	0.00	0.34	0.04	0.58	826.17	0.01	0.01
Asphalt Tank #1 (EU 2.1)	13.23	13.23	13.23	1.87	--	13.23	7.42	--	--	--
Adhesive Tank #7 (EU 2.2)	5.96	5.96	5.96	1.87	--	5.96	7.42	--	--	--
Adhesive Tank #7A (EU2.3)	7.82	7.82	7.82	1.87	--	7.82	7.42	--	--	--
Filler Silo #1 (EU4.1)	80.34	80.34	80.34	--	--	--	--	--	--	--
Filler Silo #2 (EU4.2)	40.17	40.17	40.17	--	--	--	--	--	--	--
Filler Silo #4 (EU 4.3)	80.34	80.34	80.34	--	--	--	--	--	--	--
Parting Agent Silo #5 (EU 4.4)	40.17	40.17	40.17	--	--	--	--	--	--	--
Filler Silo #3 (EU 4.6)	40.17	40.17	40.17	--	--	--	--	--	--	--
Filler Upper Surge Hopper (EU 4.7)	67.58	67.58	67.58	--	--	--	--	--	--	--
Filler Lower Surge Hopper (EU 4.8)	33.79	33.79	33.79	--	--	--	--	--	--	--
Surfacing Material Silos #1-#6 (EU 4.9)	965.00	965.00	965.00	--	--	--	--	--	--	--
Surfacing Material Silo #7 (EU4.10)	150.17	150.17	150.17	--	--	--	--	--	--	--
Parting Agent Use Bin (EU 4.5)				--	--	--	--	--	--	--
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--
Material Surfacing Applicator (EU 7.1)				--	--	0.68	--	--	--	--
Filler Hopper (EU-NFH)	18.34	18.34	18.34	--	--	--	--	--	--	--
Asphalt Filler Mixer (EU 5.1)	9.25	9.25	9.25	2.80	--	9.25	11.13	--	--	--
Asphalt Coater & Surge Tank (EU 6.1)	11.36	11.36	11.36	1.60	--	20.67	1.14	--	8.67E-02	6.89E-02
Cooling Section (EU 7.2)	15.90	15.90	15.90	--	--	4.54	--	--	0.13	0.13
Fugitive Emissions Building Ventilators (ID# 93)	8.69	8.69	8.69	--	--	22.66	--	--	0.632	0.488
<b>Insignificant Activities</b>										
0.58 MMBtu/hr Furnace	4.73E-03	1.89E-02	1.89E-02	1.49E-03	2.49E-01	1.37E-02	2.09E-01	300.69	4.70E-03	4.48E-03
(16) 0.075 MMBtu/hr Furnaces	9.79E-03	3.92E-02	3.92E-02	3.09E-03	4.84E-01	2.83E-02	2.06E-01	622.12	9.73E-03	9.28E-03
0.25 MMBtu/hr Boiler	2.04E-03	8.16E-03	8.16E-03	6.44E-04	1.07E-01	5.90E-03	9.02E-02	129.61	2.03E-03	1.93E-03
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73	2.87E-01	2.15	3671.50	--	--
Degreasers	--	--	--	--	--	9.72E-01	--	--	1.94E-03	1.94E-03
Granule and Sand Reclaim System (EU 6.2)*	2.48E-03	2.48E-03	2.48E-03	--	--	--	--	--	--	--
Hot Oil Loss (ID #92)*	--	--	--	--	--	1.37	--	--	1.37	1.37
VOC emissions from pumps, valves, flanges, etc. (ID# 92)*	--	--	--	--	--	1.40E-02	--	--	1.40E-02	1.40E-02
Material Unloading (ID# 94)*	2.55E-02	2.55E-02	2.55E-02	--	--	--	--	--	--	--
Ink Jet Printing*	--	--	--	--	--	3.58	--	--	--	--
Adhesive Mix Tank (EU-NMT)	1.79E-02	1.79E-02	1.79E-02	1.32E-02	--	1.79E-02	5.25E-02	--	--	--
Finishing Layer Application Process	--	--	--	--	--	7.51	--	--	0.09	0.09
Other**	5	5	5	5	5	5	5	10000	2.5	2.5
Total	2183.44	2183.79	2183.71	35.92	15.92	103.87	46.26	22273.30	4.93	<10
										Each HAP

\*Emissions provided by the Permittee

\*Other insignificant activities includes the sum of miscellaneous trivial and insignificant activities (i.e., safety flame purging, VOC and HAP-containing vessels, machining where an aqueous coolant is used, other cleaners and solvents, brazing equipment, soldering equipment, less than 625 pounds welding consumables, less than 3,400 inches/hour of stock 1" thickness or less that is cut, vessel degassing, blowdown, baghouse bag replacement, laboratory activities, equipment powered by internal combustion engines, parting agent recycle system (EU 4.4R), Straco tank, roll coating application of adhesive (including adhesive use tanks #1 and #2, adhesive melt tanks #1 and #2, laminating adhesive use tank, laminating adhesive melt tank, adhesive applicator pan, and laminating adhesive applicator pan).

**TSD Appendix A: Emissions Calculations  
Source Summary - Controlled PTE**

**Company Name:** Owens Corning Roofing & Asphalt, LLC  
**Address City IN Zip:** 128 West 8th Street, Brookville, Indiana 47012  
**Significant Permit Revision No:** 047-33628-00005  
**Reviewer:** Doug Logan

**Confidential information**

**Potential to Emit After Controls**

Unit	Controlled PTE (ton/yr)										
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs (CO2e)	Total HAPs	Single Worst HAP	Worst HAP
Asphalt Preheater #1 (EU 1.1)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02	n-Hexane
Asphalt Preheater #2 (EU 1.2)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02	n-Hexane
Filler Heater (EU 1.3)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02	n-Hexane
Hot Oil Heater (EU1.4)	0.13	0.16	0.14	4.57	1.31	0.05	0.76	1470.70	0.02	0.02	n-Hexane
Hot Oil Heater (EU-NOH)	0.01	0.05	0.05	0.00	0.34	0.04	0.58	826.17	0.01	0.01	n-Hexane
Asphalt Tank #1 (EU 2.1)	13.23	13.23	13.23	1.87	--	13.23	7.42	--	--	--	N/A
Adhesive Tank #7 (EU 2.2)	5.96	5.96	5.96	1.87	--	5.96	7.42	--	--	--	N/A
Adhesive Tank #7A (EU2.3)	7.82	7.82	7.82	1.87	--	7.82	7.42	--	--	--	N/A
Filler Silo #1 (EU4.1)	0.80	0.80	0.80	--	--	--	--	--	--	--	N/A
Filler Silo #2 (EU4.2)	0.40	0.40	0.40	--	--	--	--	--	--	--	N/A
Filler Silo #4 (EU 4.3)	0.80	0.80	0.80	--	--	--	--	--	--	--	N/A
Parting Agent Silo #5 (EU 4.4)	0.40	0.40	0.40	--	--	--	--	--	--	--	N/A
Filler Silo #3 (EU 4.6)	0.40	0.40	0.40	--	--	--	--	--	--	--	N/A
Filler Upper Surge Hopper (EU 4.7)	0.68	0.68	0.68	--	--	--	--	--	--	--	N/A
Filler Lower Surge Hopper (EU 4.8)	0.34	0.34	0.34	--	--	--	--	--	--	--	N/A
Surfacing Material Silos #1-#6 (EU 4.9)	9.65	9.65	9.65	--	--	--	--	--	--	--	N/A
Surfacing Material Silo #7 (EU4.10)	1.50	1.50	1.50	--	--	--	--	--	--	--	N/A
Parting Agent Use Bin (EU 4.5)	5.89	5.89	5.89	--	--	--	--	--	--	--	N/A
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--	N/A
Material Surfacing Applicator (EU 7.1)				--	--	0.68	--	--	--	--	N/A
Filler Hopper (EU-NFH)	0.18	0.18	0.18	--	--	--	--	--	--	--	N/A
Asphalt Filler Mixer (EU 5.1)	9.25	9.25	9.25	2.80	--	9.25	11.13	--	--	--	N/A
Asphalt Coater & Surge Tank (EU 6.1)	1.14	1.14	1.14	1.60	--	20.67	1.14	--	0.09	0.07	1,1,1-TCE
Cooling Section (EU 7.2)	15.90	15.90	15.90	--	--	4.54	--	--	0.13	0.13	1,1,1-TCE
Fugitive Emissions Building Ventilators (ID# 93)	8.69	8.69	8.69	--	--	22.66	--	--	0.63	0.49	Manganese
<b>Insignificant Activities</b>											
0.58 MMBtu/hr Furnace	4.73E-03	1.89E-02	1.89E-02	1.49E-03	2.49E-01	1.37E-02	2.09E-01	300.69	4.70E-03	4.48E-03	n-Hexane
(16) 0.075 MMBtu/hr Furnaces	9.79E-03	3.92E-02	3.92E-02	3.09E-03	4.84E-01	2.83E-02	2.06E-01	622.12	9.73E-03	9.28E-03	n-Hexane
0.25 MMBtu/hr Boiler	2.04E-03	8.16E-03	8.16E-03	6.44E-04	1.07E-01	5.90E-03	9.02E-02	129.61	2.03E-03	1.93E-03	n-Hexane
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73	2.87E-01	2.15	3671.50	--	--	Not Indicated
Degreasers	--	--	--	--	--	9.72E-01	--	--	1.94E-03	1.94E-03	Not Indicated
Granule and Sand Reclaim System (EU 6.2)*	2.48E-03	2.48E-03	2.48E-03	--	--	--	--	--	--	--	N/A
Hot Oil Loss (ID #92)*	--	--	--	--	--	1.37	--	--	1.37	1.37	Not Indicated
VOC emissions from pumps, valves, flanges, etc. (ID# 92)*	--	--	--	--	--	1.40E-02	--	--	1.40E-02	1.40E-02	Not Indicated
Material Unloading (ID# 94)*	2.55E-02	2.55E-02	2.55E-02	--	--	--	--	--	--	--	N/A
Ink Jet Printing*	--	--	--	--	--	3.58	--	--	--	--	N/A
Adhesive Mix Tank (EU-NMT)	1.79E-02	1.79E-02	1.79E-02	1.32E-02	--	1.79E-02	5.25E-02	--	--	--	N/A
Finishing Layer Application Process	--	--	--	--	--	7.51	--	--	0.09	0.09	Toluene
Other**	5.00	5.00	5.00	5.00	5.00	5.00	5.00	10000.00	2.50	2.50	Not Indicated
<b>Total</b>	<b>88.78</b>	<b>89.13</b>	<b>89.05</b>	<b>35.92</b>	<b>15.92</b>	<b>103.87</b>	<b>46.26</b>	<b>22273.30</b>	<b>4.93</b>	<b>&lt;10</b>	<b>Each HAP</b>

\*Emissions provided by the Permittee

\*\*Other insignificant activities includes the sum of miscellaneous trivial and insignificant activities (i.e., safety flame purging, VOC and HAP-containing vessels, machining where an aqueous coolant is used, other clean and solvents, brazing equipment, soldering equipment, less than 625 pounds welding consumables, less than 3,400 inches/hour of stock 1" thickness or less that is cut, vessel degassing, blowdown, baghouse bag replacement, laboratory activities, equipment powered by internal combustion engines, parting agent recycle system (EU 4.4R), Straco tank, roll coating application of adhesive (including adhesive use tanks #1 and #2, adhesive melt tanks #1 and #2, laminating adhesive use tank, laminating adhesive melt tank, adhesive applicator pan, and laminating adhesive applicator pan).

**TSD Appendix A: Emissions Calculations  
Source Summary - Limited PTE**

**Company Name:** Owens Corning Roofing & Asphalt, LLC  
**Address City IN Zip:** 128 West 8th Street, Brookville, Indiana 47012  
**Significant Permit Revision No:** 047-33628-00005  
**Reviewer:** Doug Logan

**Confidential information**

**Potential to Emit After Issuance of Permit**

Unit	Limited PTE (ton/yr)										
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs (CO2e)	Total HAPs	Single Worst HAP	Worst HAP
Asphalt Preheater #1 (EU 1.1)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02	n-Hexane
Asphalt Preheater #2 (EU 1.2)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02	n-Hexane
Filler Heater (EU 1.3)	0.16	0.19	0.17	5.44	1.56	0.06	0.90	1750.84	0.02	0.02	n-Hexane
Hot Oil Heater (EU1.4)	0.13	0.16	0.14	4.57	1.31	0.05	0.76	1470.70	0.02	0.02	n-Hexane
Hot Oil Heater (EU-NOH)	0.01	0.05	0.05	4.12E-03	0.34	0.04	0.58	826.17	0.01	0.01	n-Hexane
Asphalt Tank #1 (EU 2.1)	3.59	3.59	3.59	0.51	--	3.59	2.01	--	--	--	N/A
Adhesive Tank #7 (EU 2.2)	0.07	0.07	0.07	0.02	--	0.07	0.09	--	--	--	N/A
Adhesive Tank #7A (EU2.3)	0.10	0.10	0.10	0.02	--	0.10	0.09	--	--	--	N/A
Filler Silo #1 (EU4.1)	0.96	0.96	0.96	--	--	--	--	--	--	--	N/A
Filler Silo #2 (EU4.2)	0.48	0.48	0.48	--	--	--	--	--	--	--	N/A
Filler Silo #4 (EU 4.3)	0.96	0.96	0.96	--	--	--	--	--	--	--	N/A
Parting Agent Silo #5 (EU 4.4)	0.48	0.48	0.48	--	--	--	--	--	--	--	N/A
Filler Silo #3 (EU 4.6)	0.48	0.48	0.48	--	--	--	--	--	--	--	N/A
Filler Upper Surge Hopper (EU 4.7)	0.83	0.83	0.83	--	--	--	--	--	--	--	N/A
Filler Lower Surge Hopper (EU 4.8)	0.39	0.39	0.39	--	--	--	--	--	--	--	N/A
Surfacing Material Silos #1-#6 (EU 4.9)	11.56	11.56	11.56	--	--	--	--	--	--	--	N/A
Surfacing Material Silo #7 (EU4.10)	1.80	1.80	1.80	--	--	--	--	--	--	--	N/A
Parting Agent Use Bin (EU 4.5)	7.05	7.05	7.05	--	--	--	--	--	--	--	N/A
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--	N/A
Material Surfacing Applicator (EU 7.1)				--	--	0.68	--	--	--	--	N/A
Filler Hopper (EU-NFH)	0.22	0.22	0.22	--	--	--	--	--	--	--	N/A
Asphalt Filler Mixer (EU 5.1)	1.67	1.67	1.67	0.51	--	1.67	2.01	--	--	--	N/A
Asphalt Coater & Surge Tank (EU 6.1)	7.04	7.04	7.04	1.60	--	20.67	1.14	--	0.087	0.07	1,1,1-TCE
Cooling Section (EU 7.2)	15.90	15.90	15.90	--	--	4.54	--	--	0.13	0.13	1,1,1-TCE
Fugitive Emissions Building Ventilators (ID# 93)	8.69	8.69	8.69	--	--	22.66	--	--	0.632	0.488	Manganese
<b>Insignificant Activities</b>											
0.58 MMBtu/hr Furnace	4.73E-03	1.89E-02	1.89E-02	1.49E-03	2.49E-01	1.37E-02	2.09E-01	300.69	4.70E-03	4.48E-03	n-Hexane
(16) 0.075 MMBtu/hr Furnaces	9.79E-03	3.92E-02	3.92E-02	3.09E-03	4.84E-01	2.83E-02	2.06E-01	622.12	9.73E-03	9.28E-03	n-Hexane
0.25 MMBtu/hr Boiler	2.04E-03	8.16E-03	8.16E-03	6.44E-04	1.07E-01	5.90E-03	9.02E-02	129.61	2.03E-03	1.93E-03	n-Hexane
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73	2.87E-01	2.15	3671.50	--	--	Not Indicated
Degreasers	--	--	--	--	--	9.72E-01	--	--	1.94E-03	1.94E-03	Not Indicated
Granule and Sand Reclaim System (EU 6.2)*	2.48E-03	2.48E-03	2.48E-03	--	--	--	--	--	--	--	N/A
Hot Oil Loss (ID #92)*	--	--	--	--	--	1.37	--	--	1.37	1.37	Not Indicated
VOC emissions from pumps, valves, flanges, etc. (ID# 92)*	--	--	--	--	--	1.40E-02	--	--	1.40E-02	1.40E-02	Not Indicated
Material Unloading (ID# 94)*	2.55E-02	2.55E-02	2.55E-02	--	--	--	--	--	--	--	N/A
Ink Jet Printing*	--	--	--	--	--	3.58	--	--	--	--	N/A
Adhesive Mix Tank (EU-NMT)	1.79E-02	1.79E-02	1.79E-02	1.32E-02	--	1.79E-02	5.25E-02	--	--	--	N/A
Finishing Layer Application Process	--	--	--	--	--	7.51	--	--	0.09	0.09	Toluene
Other**	5.00	5.00	5.00	5.00	5.00	5.00	5.00	1000.00	2.50	2.50	Not Indicated
<b>Total</b>	<b>68.02</b>	<b>68.37</b>	<b>68.29</b>	<b>28.58</b>	<b>15.92</b>	<b>73.03</b>	<b>17.09</b>	<b>13273.30</b>	<b>4.93</b>	<b>&lt;10</b>	<b>Each HAP</b>

\*Emissions provided by the Permittee

\*Other insignificant activities includes the sum of miscellaneous trivial and insignificant activities (i.e., safety flame purging, VOC and HAP-containing vessels, machining where an aqueous coolant is used, other cleaners and solvents, brazing equipment, soldering equipment, less than 625 pounds welding consumables, less than 3,400 inches/hour of stock 1" thickness or less that is cut, vessel degassing, blowdown, baghouse bag replacement, laboratory activities, equipment powered by internal combustion engines, parting agent recycle system (EU 4.4R), Straco tank, roll coating application of adhesive (including adhesive use tanks #1 and #2, adhesive melt tanks #1 and #2, laminating adhesive use tank, laminating adhesive melt tank, adhesive applicator pan, and laminating adhesive applicator pan)).



**TSD Appendix A: Emissions Calculations**  
**Finishing Layer Application**

Page 4 of 20 TSD App A

**Company Name:** Owens Corning Roofing & Asphalt, LLC  
**Address City IN Zip:** 128 West 8th Street, Brookville, Indiana 47012  
**Administrative Amendment No:** 047-33628-00005  
**Reviewer:** Doug Logan  
**Date:** 11/5/2013

**Mixing and Coating Process**

Constituent	Flow rate of Reaction Products			Coating Emissions Reaction Products - Purge tons/yr
	lb/hr	tons/yr		
Compound A	0	0	completely reacted	0
Ethanol	1.49	6.54		6.53
Compound B	0.06	0.26	exempt	0.26
Toluene	0.02	0.09		0.09
Water	397.54	1741.23	not VOC	1741.23
Compound C	1.00	4.40	reacts completely with roofing material and forming exempt compounds	4.40
Compound D	0.20	0.88		0.88
<b>Total VOC</b>			<b>7.51 all VOC and HAPs in mixture treated as emissions, includes mixing tank purge</b>	<b>7.50</b>
<b>Total HAP</b>		<b>0.09</b>		<b>0.09</b>

**Mixing Tank Purge**

Constituent	Source data								S <sub>0</sub>	Saturation factor <sup>5</sup>			Emission rate <sup>6</sup>		
	Flow rate in mixture <sup>1</sup>	Molecular weight	Pure component vapor pressure <sup>2</sup>	Liquid mole fraction	Component partial pressure	Volumetric flow (mod Eqn 3-11 <sup>3</sup> )	Mass transfer coefficient <sup>4</sup>	S <sub>1</sub>		S <sub>2</sub>	S <sub>3</sub>	lb/hr	tons/yr		
	lb/hr	lb/lb-mole	mm Hg	x <sub>i</sub>	mm Hg	cfm	ft/min	iterations of Eqn 3-14				E <sub>i</sub>			
	m <sub>i</sub>	M <sub>i</sub>	p <sub>i</sub> <sup>sat</sup>		p <sub>i</sub> = x <sub>i</sub> p <sub>i</sub> <sup>sat</sup>	F <sub>i</sub> <sup>sat</sup>	K <sub>i</sub>								
Compound A	0	178.3	4.3	0	0	0	0.76	1	0.023	0.024	0.024				
Ethanol	1.49	46.1	42.2	1.46E-03	6.18E-02	8.32E-03	1.19	1	0.035	0.038	0.037	2.24E-03	9.81E-03		
Compound B <sup>7</sup>	0.06	4000	0.05	6.82E-07	3.55E-08	4.78E-09	0.27	1	0.008	0.009	0.009				
Toluene	0.02	92.1	20.84	9.82E-06	2.05E-04	2.76E-05	0.95	1	0.028	0.030	0.030	1.19E-05	5.19E-05		
Water	397.54	18	17.28	9.98E-01	1.72E+01	2.32E+00	1.63	1	0.048	0.051	0.051				
Compound C	1.00	94.1	0.05	4.82E-04	2.51E-05	3.37E-06	0.94	1	0.028	0.030	0.030				
Compound D	0.20	60.1	11.5	1.50E-04	1.73E-03	2.33E-04	1.09	1	0.032	0.034	0.034	7.51E-05	3.29E-04		
												Total VOC from purge		2.33E-03	1.02E-02
												Total HAP from purge		1.19E-05	5.19E-05
purge emissions negligible part of total coating process															
Given A =															
F <sub>nc</sub> = 100 cfm, purge gas flow rate															
P <sub>sys</sub> = 760 mm Hg, atmospheric pressure															
T = 293 K, ambient temperature															
R = 999 (ft <sup>3</sup> mmHg)/(lb-mole K) (CRC Handbook, 58th ed)															
K <sub>o</sub> = 1.63 ft/min, reference compound (water)															

Given A = 3.27 ft<sup>2</sup>, tank surface area  
F<sub>nc</sub> = 100 cfm, purge gas flow rate  
P<sub>sys</sub> = 760 mm Hg, atmospheric pressure  
T = 293 K, ambient temperature  
R = 999 (ft<sup>3</sup> mmHg)/(lb-mole K) (CRC Handbook, 58th ed)  
K<sub>0</sub> = 1.63 ft/min, reference compound (water)

**Methodology**

From Section 3.2.2, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, Vol II, Chapter 16, EIIP, August 2007

**Notes:**

- Purge emissions are not dependent on flow rates, these values are used to determine mole fractions in the liquid
- Vapor pressures estimated from the August Equation (Eqn 1-24, AP-42 Chapter 7) using data from Table 3-8 (Perry's, 6th ed) except water (Tables 3-4 & 3-5, Perry's) and Compound C (data found through internet sources)
- Eqn 3-11 is for single-component liquids where the partial pressure is the pure component vapor pressure. It is clear from Illustration 3-8 that the relationship for mixtures is:

$$F_i^{sat} = (F_{nc} p_i) / (p_{nc}) = (F_{nc} x_i p_i^{sat}) / (P_{sys} - \sum (x_n p_n^{sat}))$$

This follows from Raoult's Law:  $p_i = x_i p_i^{sat} = y_i P_{sys}$ , where  $p$  is partial pressure,  $p^{sat}$  is pure component vapor pressure,  $x$  is mole fraction in the liquid phase, and  $y$  is the vapor phase mole fraction; and Dalton's Law,  $P_{sys} = \sum p = p_{nc} + \sum x_n p_n^{sat}$ , so  $p_{nc} = P_{sys} - \sum x_n p_n^{sat}$ . Note that the reference text defines the denominator in Eqn 3-11 as the partial pressure of non-condensable gas (i.e., purge gas). This is confirmed by checking the calculations in Table 3-1 (Illustration 3-8). Observe that applying Eqn 3-11 without the correction to partial pressure generates a flow rate for Compound A which is not present in the mixture after reaction.

- K value for water (K<sub>0</sub>) is converted from a reference value given in Sec 3.2.2. Other values of K calculated from Eqn 3-10:

$$K_i = K_0 (M_0/M_i)^{1/3}$$

- For mixtures, Eqn 3-14 converges after relatively few iterations:

$$S_{i+1} = (K_i A) / (K_i A + F_{nc} + S_i F_i^{sat} + S_i F_j^{sat} + \dots + S_n F_n^{sat})$$

- Emission rates calculated from Eqn 3-13:

$$E_i = (M_i S_i F_i^{sat} P_{sys}) / (RT) \times (60 \text{ min/hr})$$

- Based on the chemical reaction described, Compound B is exempt under 40 CFR 51.100(s). Compound B vapor pressure not available from literature search, because of low volatility of this class of compounds vapor pressure is estimated to be the same as Compound C.

**TSD Appendix A: Emission Calculations**  
**Natural Gas Combustion (Less than 100 MMBtu/hr)**

Page 5 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

			Criteria Pollutants							GHGs				
			PM*	PM10*	PM2.5*	SO2	NOx**	VOC	CO***	CO2	N2O****	CH4	GHG Mass- Based	CO2e
Emission Factor in lb/MMCF			1.9	7.6	7.6	0.6	100.0	5.5	84.0	120000	2.2	2.3		
							50.0				0.64			
							94.0		40.0					
Emission Unit	Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential Emissions (tons/yr)											
Asphalt Preheater #1 (EU 1.1)	2.5	21.471	0.020	0.082	0.082	0.006	1.074	0.059	0.902	1288.24	0.02	0.02	1288.28	1296.08
Asphalt Preheater #2 (EU 1.2)	2.5	21.471	0.020	0.082	0.082	0.006	1.074	0.059	0.902	1288.24	0.02	0.02	1288.28	1296.08
Filler Heater (EU 1.3)	2.5	21.471	0.020	0.082	0.082	0.006	1.074	0.059	0.902	1288.24	0.02	0.02	1288.28	1296.08
Hot Oil Heater (EU 1.4)	2.1	18.035	0.017	0.069	0.069	0.005	0.902	0.050	0.757	1082.12	0.02	0.02	1082.16	1088.70
Hot Oil Heater (EU-NOH)	1.6	13.741	0.013	0.052	0.052	0.004	0.344	0.038	0.577	824.47	0.004	0.02	824.49	826.17
Natural Gas Fired Furnace @ 0.58 MMBtu/hr	0.58	4.981	0.005	0.019	0.019	0.001	0.249	0.014	0.209	298.87	0.01	0.01	298.88	300.69
16 Furnaces, each 0.075 MMBtu/hr	1.2	10.306	0.010	0.039	0.039	0.003	0.484	0.028	0.206	618.35	0.01	0.01	618.38	622.12
Boiler @ 0.25 MMBtu/hr	0.25	2.147	0.002	0.008	0.008	0.001	0.107	0.006	0.090	128.82	0.00	0.00	128.83	129.61
Total			0.11	0.43	0.43	0.03	5.31	0.31	4.55	6817.34	0.11	0.13	6817.59	6855.51

Emission Factors are from AP-42, Tables 1.4-1 and 1.4-2.

\*PM emission factor is filterable PM only. PM10 emission factor is filterable PM10 and condensable PM combined. PM2.5 emission factor is filterable PM2.5 and condensable PM combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32, < 0.3 MMBtu/hr furnaces = 94

\*\*\*Emission Factors for CO: Uncontrolled or Low NOx Burners = 84, < 0.3 MMBtu/hr furnaces = 40

\*\*\*\*Emission Factors for N2O: Uncontrolled = 2.2, Low NOx Burner = 0.64

			HAPs - Organics					HAPs - Metals					Total HAPs
			Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel	
Emission Factor in lb/MMCF			2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	1.8880
Emission Unit	Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/yr)	Potential Emissions (tons/yr)										
Asphalt Preheater #1 (EU 1.1)	2.5	21.471	2.3E-05	1.3E-05	8.1E-04	1.9E-02	3.7E-05	5.4E-06	1.2E-05	1.5E-05	4.1E-06	2.3E-05	2.0E-02
Asphalt Preheater #2 (EU 1.2)	2.5	21.471	2.3E-05	1.3E-05	8.1E-04	1.9E-02	3.7E-05	5.4E-06	1.2E-05	1.5E-05	4.1E-06	2.3E-05	2.0E-02
Filler Heater (EU 1.3)	2.5	21.471	2.3E-05	1.3E-05	8.1E-04	1.9E-02	3.7E-05	5.4E-06	1.2E-05	1.5E-05	4.1E-06	2.3E-05	2.0E-02
Hot Oil Heater (EU 1.4)	2.1	18.035	1.9E-05	1.1E-05	6.8E-04	1.6E-02	3.1E-05	4.5E-06	9.9E-06	1.3E-05	3.4E-06	1.9E-05	1.7E-02
Hot Oil Heater (EU-NOH)	1.6	13.741	1.4E-05	8.2E-06	5.2E-04	1.2E-02	2.3E-05	3.4E-06	7.6E-06	9.6E-06	2.6E-06	1.4E-05	1.3E-02
Natural Gas Fired Furnace @ 0.58 MMBtu/hr	0.58	4.981	5.2E-06	3.0E-06	1.9E-04	4.5E-03	8.5E-06	1.2E-06	2.7E-06	3.5E-06	9.5E-07	5.2E-06	4.7E-03
16 Furnaces, each 0.075 MMBtu/hr	1.2	10.306	1.1E-05	6.2E-06	3.9E-04	9.3E-03	1.8E-05	2.6E-06	5.7E-06	7.2E-06	2.0E-06	1.1E-05	9.7E-03
Boiler @ 0.25 MMBtu/hr	0.25	2.147	2.3E-06	1.3E-06	8.1E-05	1.9E-03	3.7E-06	5.4E-07	1.2E-06	1.5E-06	4.1E-07	2.3E-06	2.0E-03
Total			1.2E-04	6.8E-05	4.3E-03	1.0E-01	1.9E-04	2.8E-05	6.2E-05	8.0E-05	2.2E-05	1.2E-04	1.1E-01

Emission Factors are from AP-42, Tables 1.4-3 and 1.4-4.

The five highest organic and metal HAPs emission factors are provided above. The total HAPs is the sum of all HAPs listed in AP-42, Tables 1.4-3 and 1.4-4.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Methodology**

Heating Value of Natural Gas is assumed to be 1020 MMBtu/MMCF

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) \* 8,760 hrs/yr \* 1 MMCF/1,020 MMBtu

Potential Emission (tons/yr) = Throughput (MMCF/yr) \* Emission Factor (lb/MMCF) \* (1 ton/2,000 lb)

GHG Mass-Based (ton/yr) = CO2 (ton/yr) + N2O (ton/yr) + CH4 (ton/yr)

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

**TSD Appendix A: Emission Calculations**  
**No. 2 Fuel Oil Combustion**  
**Commercial Boilers (< 100 MMBtu/hr)**

Page 6 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

S = Weight % Sulfur

0.49

			Criteria Pollutants							GHGs			
			PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO	CO2	N2O	CH4	CO2e
Emission Factor in lb/kgal			2.0	2.4	2.13	69.6	20.0	0.34	5.0	22300	0.26	0.216	
						142S							
Emissions Unit	Heat Input Capacity (MMBtu/hr)	Potential Throughput (kgal/yr)	Potential Emission in tons/yr										
Asphalt Preheater #1 (EU 1.1)	2.5	156.429	0.16	0.19	0.17	5.44	1.56	0.03	0.39	1744.2	2.03E-02	1.69E-02	1750.8
Asphalt Preheater #2 (EU 1.2)	2.5	156.429	0.16	0.19	0.17	5.44	1.56	0.03	0.39	1744.2	2.03E-02	1.69E-02	1750.8
Filler Heater (EU 1.3)	2.5	156.429	0.16	0.19	0.17	5.44	1.56	0.03	0.39	1744.2	2.03E-02	1.69E-02	1750.8
Hot Oil Heater (EU 1.4)	2.1	131.400	0.13	0.16	0.14	4.57	1.31	0.02	0.33	1465.1	1.71E-02	1.42E-02	1470.7
Total			0.60	0.71	0.64	20.90	6.01	0.10	1.50	6697.6	0.08	0.06	6723.2

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, 1.3-3, 1.3-7, 1.3-8, 1.3-12 (SCC 1-02-005-01/02/03) Supplement E 9/98

\*PM emission factor is filterable PM only. PM10 emission factor is filterable PM10 and condensable PM. PM2.5 emission factor is filterable PM2.5 and

**Methodology**

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

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) \* (8,760 hrs/yr) \* (1kgal/1000 gallon) \* (1 gal/0.140 MMBtu)

Emission (tons/yr) = Throughput (kgals/yr) \* Emission Factor (lb/kgal) \* (1 ton/2,000 lb)

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

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)

		HAPs - Metals									
		Arsenic	Beryllium	Cadmium	Chromium	Lead	Mercury	Manganese	Nickel	Selenium	Total Metal HAPs
Emission Factor in lb/MMBtu		4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06	3.0E-06	6.0E-06	3.0E-06	1.5E-05	
Emissions Unit	Heat Input Capacity (MMBtu/hr)	Potential Emissions (tons/yr)									
Asphalt Preheater #1 (EU 1.1)	2.5	4.4E-05	3.3E-05	3.3E-05	3.3E-05	9.9E-05	3.3E-05	6.6E-05	3.3E-05	1.6E-04	5.4E-04
Asphalt Preheater #2 (EU 1.2)	2.5	4.4E-05	3.3E-05	3.3E-05	3.3E-05	9.9E-05	3.3E-05	6.6E-05	3.3E-05	1.6E-04	5.4E-04
Filler Heater (EU 1.3)	2.5	4.4E-05	3.3E-05	3.3E-05	3.3E-05	9.9E-05	3.3E-05	6.6E-05	3.3E-05	1.6E-04	5.4E-04
Hot Oil Heater (EU 1.4)	2.1	3.7E-05	2.8E-05	2.8E-05	2.8E-05	8.3E-05	2.8E-05	5.5E-05	2.8E-05	1.4E-04	4.5E-04
Total		1.7E-04	1.3E-04	1.3E-04	1.3E-04	3.8E-04	1.3E-04	2.5E-04	1.3E-04	6.3E-04	2.1E-03

Emission Factors are from AP 42, Table 1.3-10 (SCC 1-01-005-01, 1-02-005-01, 1-03-005-01)

No data was available in AP-42 for organic HAPs.

**Methodology**

Potential Emissions (tons/year) = Throughput (MMBtu/hr) \* Emission Factor (lb/mmBtu) \* (8,760 hrs/yr) \* (1 ton/2,000 lb)

**TSD Appendix A: Emissions Calculations**  
**LPG Combustion, < 100 MMBtu/hr**

Page 7 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

			Criteria Pollutants							GHGs			
			PM*	PM10*	PM2.5*	SO <sub>2</sub>	NOx	VOC	CO	CO2	N2O	CH4	CO2e
<i>Emission Factor (lb/kgal)</i>			0.2	0.7	0.7	0.01	13.0	1.0	7.5	12500	0.9	0.2	
						(0.10S)		TOC Value					
Combustion Unit	Heat Input Capacity (MMBtu/hr)	Potential Fuel Throughput (kgal/yr)	Potential Emission in tons/yr										
Item (b) of Section A.3 of Permit	6	574.43	0.1	0.2	0.2	0.0	3.7	0.3	2.15	3590.16	0.26	0.06	3671.5

Emission Factors from AP-42, Table 1.5-1 for propane, commercial boilers.

\*PM is filterable particulate only. PM10 and PM2.5 are filterable PM and condensable PM combined.

**Methodology**

Potential LPG Throughput for Combustion Unit (kgal/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hrs/yr) x 1 kgal/1,000 gallons x 1 gallon/0.0915 MMBtu. The maximum heat input capacity is assumed as the upper limit for the insignificant activities category.

Emission (tons/yr) = Throughput (kgal/yr) x Emission Factor (lb/kgal) x (1 ton/2,000 lb)

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

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).

**TSD Appendix A: Emissions Calculations**  
**Tanks Summary**

**Company Name:** Owens Corning Roofing & Asphalt, LLC  
**Address City IN Zip:** 128 West 8th Street, Brookville, Indiana 47012  
**Administrative Amendment No:** 047-33628-00005  
**Reviewer:** Doug Logan  
**Date:** 11/5/2013

Tank	Emission Factors (lb/Mgal)						
	PM	PM10	PM2.5	VOC	CO	H2S	SO2
	[1]	[1]	[1]	[1]	[2]	[2]	[2]
EU 2.1	0.2517	0.2517	0.2517	0.2517	0.1411	0.0189	0.0355
EU 2.2	0.1135	0.1135	0.1135	0.1135	0.1411	0.0189	0.0355
EU 2.3	0.1488	0.1488	0.1488	0.1488	0.1411	0.0189	0.0355
EU 5.1	0.1173	0.1173	0.1173	0.1173	0.1411	0.0189	0.0355
EU NMT	0.0481	0.0481	0.0481	0.0481	0.1411	0.0189	0.0355

**Basis of Emission Factors**

[1] As calculated for the individual tanks on subsequent pages of these calculations.

[2] From "Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading", D.C. Trumbore, *Environmental Progress*, Vol. 18, No. 4, Winter 1999, pp. 250-259. (Included as TSD Appendix B):

CO (ppm) = 142 \* %LEL + 800

H2S (ppm) = 12.43 \* %LEL + 400.5

for worst case %LEL = 100%,

CO = 15000 ppm

H2S = 1643.5 ppm

CO EF (lb/Mgal) = Worst-case emission factor (15,000 ppm) x conversion factor (1.14 mg/m<sup>3</sup>/ppm) x 0.028 m<sup>3</sup>/scf x 1 cf/7.48 gallon x 1 lb/453,600 mg x 1000 gal/Mgal

H<sub>2</sub>S EF (lb/Mgal) = Worst-case emission factor (1,643.5 ppm) x conversion factor (1.39 mg/m<sup>3</sup>/ppm) x 0.028 m<sup>3</sup>/scf x 1 cf/7.48 gallon x 1 lb/453,600 mg x 1000 gal/Mgal

SO<sub>2</sub> EF (lb/Mgal) = H<sub>2</sub>S EF (lb/Mgal) x Molecular weight of SO<sub>2</sub> (64 lb/lbmol) / Molecular weight of H<sub>2</sub>S (34 lb/lbmol)

**Potential Emissions Based on Maximum Throughput**

Tank	Maximum Throughput (Mgal/yr)	Unrestricted Potential Emissions (ton/yr)						
		PM	PM10	PM2.5	SO2	VOC	CO	H2S
EU 2.1	105120	13.229	13.229	13.229	1.865	13.229	7.417	0.991
EU 2.2	105120	5.965	5.965	5.965	1.865	5.965	7.417	0.991
EU 2.3	105120	7.823	7.823	7.823	1.865	7.823	7.417	0.991
EU 5.1	157680	9.249	9.249	9.249	2.798	9.249	11.126	1.486
EU NMT	744	0.018	0.018	0.018	0.013	0.018	0.052	0.007

**Potential Emissions Based on Limited Throughput**

Tank	Limited Throughput (Mgal/yr)	Limited Potential Emissions (ton/yr)						
		PM	PM10	PM2.5	SO2	VOC	CO	H2S
EU 2.1	28502.4	3.587	3.587	3.587	0.506	3.587	2.011	0.269
EU 2.2	1295.64	0.074	0.074	0.074	0.023	0.074	0.091	0.012
EU 2.3	1295.64	0.096	0.096	0.096	0.023	0.096	0.091	0.012
EU 5.1	28502.4	1.672	1.672	1.672	0.506	1.672	2.011	0.269
EU NMT	744	0.018	0.018	0.018	0.013	0.018	0.052	0.007

**Methodology**

Emissions (ton/yr) = Throughput (Mgal/yr) x Emission Factor (lb/Mgal) x (1 ton/2000 lb)

**TSD Appendix A: Emissions Calculations**  
**Tank EU 2.1 VOC and Particulate Emission Factor Derivation**

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

	Maximum	Limited	Basis
<b>TANK AND LOCAL INFORMATION</b>			
Tank Number	EU 2.1	EU 2.1	
Product Stored	Oxidized Asphalt	Oxidized Asphalt	
Tank Color	Silver	Silver	
Tank Height, H <sub>S</sub> (ft)	29.33	29.33	Obtained from original 1995 FESOP Application
Tank Diameter, D (ft)	15	15	Obtained from original 1995 FESOP Application
Tank Volume, V (gal)	38769.13	38769.13	Calculated, ~40,000 gallon tank (7.48 gal/ft <sup>3</sup> )
Tank Volume, V (kBBL)	0.92	0.92	Calculated (0.0001781 kBBL/ft <sup>3</sup> )
Roof Type (Cone/Dome)	CONE	CONE	
<b>Cone Roof Parameters</b>			
Tank Roof Slope (default 0.0625), S <sub>R</sub> (ft/ft)	0.0625	0.0625	Default
<b>Dome Roof Parameters</b>			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T <sub>AA</sub> (°F)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T <sub>B</sub> (°F)	410.0	410.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T <sub>B</sub> (°R)	870.0	870.0	Calculated (T(°R) = T(°F) + 460)
Local Atmospheric Pressure., P <sub>A</sub> (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M <sub>v</sub> ) (lb/lb-mol)	84	84	Specification for oxidized asphalt
Throughput, Q (gal/yr)	105,120,000	28,502,400	Maximum based on 200 gal/min maximum capacity. Limited based on FESOP limit.
Throughput, Q (bbl/yr)	2,502,924	678,647	Converted using 7.48 gal/ft <sup>3</sup> and 0.1781 bbl/ft <sup>3</sup>
% of Year Used	100	100	Worst case
Paint Solar Absorptance, α (dimensionless) Table 7.1-6	0.39	0.39	AP-42, Table 7.1-6, Aluminum Specular Good Condition
Solar Insulation, I (Btu/ft <sup>2</sup> ·day)	1,298	1,298	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Is Tank Welded? (Y/N)	Y	Y	
Breather Vent Pressure (default = 0.03), P <sub>BP</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P <sub>BV</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (°F)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H <sub>L</sub> (ft)	19.26	19.26	Updated, assumed 67% of total height (0.67H <sub>LX</sub> ).
Maximum Liquid Height, H <sub>LX</sub> (ft)	28.74	28.74	Updated, assumed 98% of maximum physical height (0.98H <sub>S</sub> ).
<b>TANK TEMPERATURE AND TURNOVER</b>			
Roof Outage, H <sub>RO</sub> (ft)	0.16	0.16	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H <sub>VO</sub> (ft)	10.23	10.23	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T <sub>LA</sub> (°R)	870.0	870.0	AP-42, Ch. 7.1, For insulated tanks, T <sub>LA</sub> is based on T <sub>B</sub>
Daily Ambient Temperature Range, ΔT <sub>A</sub> (°R)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT <sub>V</sub> (°R)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T <sub>LX</sub> (°R)	877.11	877.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T <sub>LN</sub> (°R)	862.89	862.89	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Stock Turnover Rate, N (turnovers/yr)	2766.37	750.08	Calculated, AP-42, Ch. 7.1, Eqns. 1-30 and 1-31
<b>VAPOR PRESSURE</b>			
Vapor Pressure Equation Constant -- alpha	7.0607	7.0607	From Table 2 (Trumbore) for oxidized asphalt.
Vapor Pressure Equation Constant -- beta	-16.9570	-16.9570	From Table 2 (Trumbore) for oxidized asphalt.
Vapor Pressure at Maximum Liquid Surface Temperature, P <sub>VX</sub> (psia)	0.676	0.676	(Trumbore): log P <sub>VX</sub> (mmHg) = alpha * log T <sub>LX</sub> (°F) + beta
Vapor Pressure at Average Liquid Surface Temperature, P <sub>VA</sub> (psia)	0.599	0.599	(Trumbore): log P <sub>VA</sub> (mmHg) = alpha * log T <sub>LA</sub> (°F) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P <sub>VN</sub> (psia)	0.529	0.529	(Trumbore): log P <sub>VN</sub> (mmHg) = alpha * log T <sub>LN</sub> (°F) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
<b>STANDING STORAGE LOSSES</b>			
Tank Vapor Space Volume, V <sub>V</sub> (ft <sup>3</sup> )	1807.5	1807.5	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W <sub>V</sub> (lb/ft <sup>3</sup> )	0.005	0.005	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K <sub>E</sub> (dimensionless)	0.043	0.043	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K <sub>S</sub> (dimensionless)	0.755	0.755	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L <sub>S</sub> (lb/yr)	116.43	116.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
<b>WORKING LOSS</b>			
Working Loss Turnover Factor, K <sub>N</sub> (dimensionless)	0.178	0.207	K <sub>N</sub> = (180+N)/6N, for N>36
Working Loss Product Factor, K <sub>P</sub> (dimensionless)	1	1	K <sub>P</sub> = 1 for organic liquids other than crude oils
Total Working Losses, L <sub>W</sub> (lb/yr)	22357.40	7057.54	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
<b>TOTAL EMISSIONS</b>			
Total HC Emissions, L <sub>T</sub> (lb/yr)	22473.83	7173.98	Calculated, AP-42, Ch. 7.1, Eqn. 1-1
Total HC Emissions (tpy)	11.24	3.59	1 ton = 2000 lb
PM, PM10, PM2.5, VOC Emission Factor (lb/Mgal)	0.21	0.25	All emissions are assumed to be PM, PM10, PM2.5, and VOC

**Data Sources**

AP-42, Ch. 7.1, Organic Liquid Storage Tanks, 11/06

TANKS 4.0.9d

"Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading", D.C. Trumbore, *Environmental Progress*, Vol. 18, No. 4, Winter 1999, pp. 250-259. (Included as TSD Appendix B).

**TSD Appendix A: Emissions Calculations**  
**Tank EU 2.2 VOC and Particulate Emission Factor Derivation**

Page 10 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

	Maximum	Limited	Basis
<b>TANK AND LOCAL INFORMATION</b>			
Tank Number	EU 2.2	EU 2.2	
Product Stored	Modified Laminated Asphalt	Modified Laminated Asphalt	
Tank Color	Silver	Silver	
Tank Height, H <sub>S</sub> (ft)	16.8	16.8	Obtained from original 1995 FESOP Application (updated 10/21/96)
Tank Diameter, D (ft)	10	10	Obtained from original 1995 FESOP Application (updated 10/21/96)
Tank Volume, V (gal)	9870	9870	Calculated, ~10,000 gallon tank (7.48 gal/ft <sup>3</sup> )
Tank Volume, V (kBBL)	0.23	0.23	Calculated (0.0001781 kBBL/ft <sup>3</sup> )
Roof Type (Cone/Dome)	CONE	CONE	
<b>Cone Roof Parameters</b>			
Tank Roof Slope (default 0.0625), S <sub>R</sub> (ft/ft)	0.0625	0.0625	Default
<b>Dome Roof Parameters</b>			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T <sub>AA</sub> (°F)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T <sub>B</sub> (°F)	320.0	320.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T <sub>B</sub> (°R)	780.0	780.0	Calculated (T(°R) = T(°F) + 460)
Local Atmospheric Pressure., P <sub>A</sub> (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M <sub>V</sub> ) (lb/lb-mol)	84	84	Specification for oxidized asphalt
Throughput, Q (gal/yr)	105,120,000	1,295,640	Maximum based on 200 gal/min maximum capacity. Limited based on FESOP limit.
Throughput, Q (bbl/yr)	2,502,924	30,849	Converted using 7.48 gal/ft <sup>3</sup> and 0.1781 bbl/ft <sup>3</sup>
% of Year Used	100	100	Worst case
Paint Solar Absorptance, α (dimensionless) Table 7.1-6	0.39	0.39	AP-42, Table 7.1-6, Aluminum Specular Good Condition
Solar Insulation, I (Btu/ft <sup>2</sup> *day)	1,298	1,298	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Is Tank Welded? (Y/N)	Y	Y	
Breather Vent Pressure (default = 0.03), P <sub>BP</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P <sub>BV</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (°F)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H <sub>L</sub> (ft)	11.03	11.03	Updated, assumed 67% of total height (0.67H <sub>LX</sub> ).
Maximum Liquid Height, H <sub>LX</sub> (ft)	16.46	16.46	Updated, assumed 98% of maximum physical height (0.98H <sub>S</sub> ).
<b>TANK TEMPERATURE AND TURNOVER</b>			
Roof Outage, H <sub>RO</sub> (ft)	0.10	0.10	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H <sub>VO</sub> (ft)	5.87	5.87	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T <sub>LA</sub> (°R)	780.0	780.0	AP-42, Ch. 7.1, For insulated tanks, T <sub>LA</sub> is based on T <sub>B</sub>
Daily Ambient Temperature Range, ΔT <sub>A</sub> (°R)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT <sub>V</sub> (°R)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T <sub>LX</sub> (°R)	787.11	787.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T <sub>LN</sub> (°R)	772.89	772.89	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Stock Turnover Rate, N (turnovers/yr)	10866.63	133.93	Calculated, AP-42, Ch. 7.1, Eqns. 1-30 and 1-31
<b>VAPOR PRESSURE</b>			
Vapor Pressure Equation Constant -- alpha	7.0850	7.0850	From Table 2 (Trumbore) for flux asphalt.
Vapor Pressure Equation Constant -- beta	-16.8999	-16.8999	From Table 2 (Trumbore) for flux asphalt.
Vapor Pressure at Maximum Liquid Surface Temperature, P <sub>VX</sub> (psia)	0.160	0.160	(Trumbore): log P <sub>VX</sub> (mmHg) = alpha * log T <sub>LX</sub> (°F) + beta
Vapor Pressure at Average Liquid Surface Temperature, P <sub>VA</sub> (psia)	0.137	0.137	(Trumbore): log P <sub>VA</sub> (mmHg) = alpha * log T <sub>LA</sub> (°F) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P <sub>VN</sub> (psia)	0.117	0.117	(Trumbore): log P <sub>VN</sub> (mmHg) = alpha * log T <sub>LN</sub> (°F) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
<b>STANDING STORAGE LOSSES</b>			
Tank Vapor Space Volume, V <sub>V</sub> (ft <sup>3</sup> )	461.3	461.3	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W <sub>V</sub> (lb/ft <sup>3</sup> )	0.001	0.001	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K <sub>E</sub> (dimensionless)	0.039	0.039	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K <sub>S</sub> (dimensionless)	0.959	0.959	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L <sub>S</sub> (lb/yr)	8.74	8.74	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
<b>WORKING LOSS</b>			
Working Loss Turnover Factor, K <sub>N</sub> (dimensionless)	0.169	0.391	K <sub>N</sub> = (180+N)/6N, for N>36
Working Loss Product Factor, K <sub>P</sub> (dimensionless)	1	1	K <sub>P</sub> = 1 for organic liquids other than crude oils
Total Working Losses, L <sub>W</sub> (lb/yr)	4866.13	138.29	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
<b>TOTAL EMISSIONS</b>			
Total HC Emissions, L <sub>T</sub> (lb/yr)	4874.87	147.03	Calculated, AP-42, Ch. 7.1, Eqn. 1-1
Total HC Emissions (tpy)	2.437	0.074	1 ton = 2000 lb
PM, PM10, PM2.5, VOC Emission Factor (lb/Mgal)	0.05	0.11	All emissions are assumed to be PM, PM10, PM2.5, and VOC

**Data Sources**

AP-42, Ch. 7.1, Organic Liquid Storage Tanks, 11/06

TANKS 4.0.9d

"Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading", D.C. Trumbore, *Environmental Progress*, Vol. 18, No. 4, Winter 1999, pp. 250-259. (Included as TSD Appendix B).

**TSD Appendix A: Emissions Calculations**  
**Tank EU 2.3 VOC and Particulate Emission Factor Derivation**

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

	Maximum	Limited	Basis
<b>TANK AND LOCAL INFORMATION</b>			
Tank Number	EU 2.3	EU 2.3	
Product Stored	Modified Laminated Asphalt	Modified Laminated Asphalt	
Tank Color	Silver	Silver	
Tank Height, H <sub>S</sub> (ft)	16	16	Provided by Source
Tank Diameter, D (ft)	12.63	12.63	Provided by Source
Tank Volume, V (gal)	14994	14994	Calculated, ~15,000 gallon tank (7.48 gal/ft <sup>3</sup> )
Tank Volume, V (kBBL)	0.36	0.36	Calculated (0.0001781 kBBL/ft <sup>3</sup> )
Roof Type (Cone/Dome)	CONE	CONE	
<b>Cone Roof Parameters</b>			
Tank Roof Slope (default 0.0625), S <sub>R</sub> (ft/ft)	0.0625	0.0625	Default
<b>Dome Roof Parameters</b>			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T <sub>AA</sub> (°F)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T <sub>B</sub> (°F)	320.0	320.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T <sub>B</sub> (°R)	780.0	780.0	Calculated (T(°R) = T(°F) + 460)
Local Atmospheric Pressure., P <sub>A</sub> (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M <sub>v</sub> ) (lb/lb-mol)	84	84	Specification for oxidized asphalt
Throughput, Q (gal/yr)	105,120,000	1,295,640	Maximum based on 200 gal/min maximum capacity. Limited based on FESOP limit.
Throughput, Q (bbl/yr)	2,502,924	30,849	Converted using 7.48 gal/ft <sup>3</sup> and 0.1781 bbl/ft <sup>3</sup>
% of Year Used	100	100	Worst case
Paint Solar Absorptance, α (dimensionless) Table 7.1-6	0.39	0.39	AP-42, Table 7.1-6, Aluminum Specular Good Condition
Solar Insulation, I (Btu/ft <sup>2</sup> -day)	1,298	1,298	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Is Tank Welded? (Y/N)	Y	Y	
Breather Vent Pressure (default = 0.03), P <sub>BP</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P <sub>EV</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (°F)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H <sub>L</sub> (ft)	10.51	10.51	Updated, assumed 67% of total height (0.67H <sub>S</sub> ).
Maximum Liquid Height, H <sub>LX</sub> (ft)	15.68	15.68	Updated, assumed 98% of maximum physical height (0.98H <sub>S</sub> ).
<b>TANK TEMPERATURE AND TURNOVER</b>			
Roof Outage, H <sub>RO</sub> (ft)	0.13	0.13	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H <sub>VO</sub> (ft)	5.63	5.63	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T <sub>LA</sub> (°R)	780.0	780.0	AP-42, Ch. 7.1, For insulated tanks, T <sub>LA</sub> is based on T <sub>B</sub>
Daily Ambient Temperature Range, ΔT <sub>A</sub> (°R)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT <sub>V</sub> (°R)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T <sub>LX</sub> (°R)	787.11	787.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T <sub>LN</sub> (°R)	772.89	772.89	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Stock Turnover Rate, N (turnovers/yr)	7152.82	88.16	Calculated, AP-42, Ch. 7.1, Eqns. 1-30 and 1-31
<b>VAPOR PRESSURE</b>			
Vapor Pressure Equation Constant -- alpha	7.0850	7.0850	From Table 2 (Trumbore) for flux asphalt.
Vapor Pressure Equation Constant -- beta	-16.8999	-16.8999	From Table 2 (Trumbore) for flux asphalt.
Vapor Pressure at Maximum Liquid Surface Temperature, P <sub>VX</sub> (psia)	0.160	0.160	(Trumbore): log P <sub>VX</sub> (mmHg) = alpha * log T <sub>LX</sub> (°F) + beta
Vapor Pressure at Average Liquid Surface Temperature, P <sub>VA</sub> (psia)	0.137	0.137	(Trumbore): log P <sub>VA</sub> (mmHg) = alpha * log T <sub>LA</sub> (°F) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P <sub>VN</sub> (psia)	0.117	0.117	(Trumbore): log P <sub>VN</sub> (mmHg) = alpha * log T <sub>LN</sub> (°F) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
<b>STANDING STORAGE LOSSES</b>			
Tank Vapor Space Volume, V <sub>V</sub> (ft <sup>3</sup> )	704.8	704.8	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W <sub>V</sub> (lb/ft <sup>3</sup> )	0.001	0.001	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K <sub>E</sub> (dimensionless)	0.039	0.039	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K <sub>S</sub> (dimensionless)	0.961	0.961	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L <sub>S</sub> (lb/yr)	13.38	13.38	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
<b>WORKING LOSS</b>			
Working Loss Turnover Factor, K <sub>N</sub> (dimensionless)	0.171	0.507	K <sub>N</sub> = (180+N)/6N, for N>36
Working Loss Product Factor, K <sub>P</sub> (dimensionless)	1	1	K <sub>P</sub> = 1 for organic liquids other than crude oils
Total Working Losses, L <sub>W</sub> (lb/yr)	4907.3	179.5	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
<b>TOTAL EMISSIONS</b>			
Total HC Emissions, L <sub>T</sub> (lb/yr)	4920.7	192.8	Calculated, AP-42, Ch. 7.1, Eqn. 1-1
Total HC Emissions (tpy)	2.460	0.096	1 ton = 2000 lb
PM, PM10, PM2.5, VOC Emission Factor (lb/Mgal)	0.05	0.15	All emissions are assumed to be PM, PM10, PM2.5, and VOC

**Data Sources**

AP-42, Ch. 7.1, Organic Liquid Storage Tanks, 11/06

TANKS 4.0.9d

\*Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading", D.C. Trumbore, *Environmental Progress*, Vol. 18, No. 4, Winter 1999, pp. 250-259. (Included as TSD Appendix B).



**TSD Appendix A: Emissions Calculations**  
**Tank EU 5.1 VOC and Particulate Emission Factor Derivation**

Page 12 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

	Maximum	Limited	Basis
<b>TANK AND LOCAL INFORMATION</b>			
Tank Number	EU 5.1	EU 5.1	
Product Stored	Oxidized Asphalt	Oxidized Asphalt	
Tank Color	Silver	Silver	
Tank Height, H <sub>S</sub> (ft)	6.08	6.08	Provided by Source
Tank Diameter, D (ft)	4.23	4.23	Provided by Source (Approximated diameter based on equivalent volume as 45"x45"x73" rectangular tank).
Tank Effective Height, H <sub>E</sub> (ft)	3.32	3.32	AP-42, Ch. 7.1, Eqn. 1-14.
Tank Effective Diameter, D <sub>E</sub> (ft)	5.72	5.72	AP-42, Ch. 7.1, Eqn. 1-13.
Tank Volume, V (gal)	639	639	Calculated, ~640 gallon tank (7.48 gal/ft <sup>3</sup> )
Tank Volume, V (kBBL)	0.015	0.015	Calculated (0.0001781 kBBL/ft <sup>3</sup> )
Roof Type (Cone/Dome)	CONE	CONE	
<b>Cone Roof Parameters</b>			
Tank Roof Slope (default 0.0625), S <sub>R</sub> (ft/ft)	0.001	0.001	Set to minimum value to reflect flat roof.
<b>Dome Roof Parameters</b>			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T <sub>AA</sub> (°F)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T <sub>B</sub> (°F)	380.0	380.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T <sub>B</sub> (°R)	840.0	840.0	Calculated (T(°R) = T(°F) + 460)
Local Atmospheric Pressure., P <sub>A</sub> (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M <sub>v</sub> ) (lb/lb-mol)	84	84	Specification for oxidized asphalt
Throughput, Q (gal/yr)	157,680,000	28,502,400	Maximum based on 300 gal/min maximum capacity. Limited based on FESOP limit.
Throughput, Q (bbl/yr)	3,754,386	678,647	Converted using 7.48 gal/ft <sup>3</sup> and 0.1781 bbl/ft <sup>3</sup>
% of Year Used	100	100	Worst case
Paint Solar Absorptance, α (dimensionless) Table 7.1-6	0.39	0.39	AP-42, Table 7.1-6, Aluminum Specular Good Condition
Solar Insulation, I (Btu/ft <sup>2</sup> *day)	1.298	1.298	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Is Tank Welded? (Y/N)	Y	Y	
Breather Vent Pressure (default = 0.03), P <sub>BP</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P <sub>BV</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (°F)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H <sub>L</sub> (ft)	2.18	2.18	Updated, assumed 67% of total height (0.67H <sub>LX</sub> ).
Maximum Liquid Height, H <sub>LX</sub> (ft)	3.26	3.26	Updated, assumed 98% of maximum physical height (0.98H <sub>E</sub> ).
<b>TANK TEMPERATURE AND TURNOVER</b>			
Roof Outage, H <sub>RO</sub> (ft)	0.001	0.001	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H <sub>VO</sub> (ft)	1.66	1.66	AP-42, Ch. 7.1, Eqn. 1-15, Use H <sub>E</sub> /2 for horizontal tanks
Average Liquid Surface Temperature, T <sub>LA</sub> (°R)	840.0	840.0	AP-42, Ch. 7.1, For insulated tanks, T <sub>LA</sub> is based on T <sub>B</sub>
Daily Ambient Temperature Range, ΔT <sub>A</sub> (°R)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT <sub>V</sub> (°R)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T <sub>LX</sub> (°R)	847.11	847.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T <sub>LN</sub> (°R)	832.89	832.89	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Stock Turnover Rate, N (turnovers/yr)	251716.14	45500.47	Calculated, AP-42, Ch. 7.1, Eqns. 1-30 and 1-31
<b>VAPOR PRESSURE</b>			
Vapor Pressure Equation Constant -- alpha	7.0607	7.0607	From Table 2 (Trumbore) for oxidized asphalt.
Vapor Pressure Equation Constant -- beta	-16.9570	-16.9570	From Table 2 (Trumbore) for oxidized asphalt.
Vapor Pressure at Maximum Liquid Surface Temperature, P <sub>VX</sub> (psia)	0.399	0.399	(Trumbore): log P <sub>VX</sub> (mmHg) = alpha * log T <sub>LX</sub> (°F) + beta
Vapor Pressure at Average Liquid Surface Temperature, P <sub>VA</sub> (psia)	0.350	0.350	(Trumbore): log P <sub>VA</sub> (mmHg) = alpha * log T <sub>LA</sub> (°F) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P <sub>VN</sub> (psia)	0.307	0.307	(Trumbore): log P <sub>VN</sub> (mmHg) = alpha * log T <sub>LN</sub> (°F) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
<b>STANDING STORAGE LOSSES</b>			
Tank Vapor Space Volume, V <sub>V</sub> (ft <sup>3</sup> )	42.7	42.7	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W <sub>V</sub> (lb/ft <sup>3</sup> )	0.003	0.003	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K <sub>E</sub> (dimensionless)	0.040	0.040	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K <sub>S</sub> (dimensionless)	0.970	0.970	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L <sub>S</sub> (lb/yr)	2.00	2.00	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
<b>WORKING LOSS</b>			
Working Loss Turnover Factor, K <sub>N</sub> (dimensionless)	0.167	0.167	K <sub>N</sub> = (180+N)/6N, for N>36
Working Loss Product Factor, K <sub>P</sub> (dimensionless)	1	1	K <sub>P</sub> = 1 for organic liquids other than crude oils
Total Working Losses, L <sub>W</sub> (lb/yr)	18426.42	3341.57	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
<b>TOTAL EMISSIONS</b>			
Total HC Emissions, L <sub>T</sub> (lb/yr)	18428.42	3343.56	Calculated, AP-42, Ch. 7.1, Eqn. 1-1
Total HC Emissions (tpy)	9.214	1.672	1 ton = 2000 lb
PM, PM10, PM2.5, VOC Emission Factor (lb/Mgal)	0.12	0.12	All emissions are assumed to be PM, PM10, PM2.5, and VOC

**Data Sources**

AP-42, Ch. 7.1, Organic Liquid Storage Tanks, 11/06  
TANKS 4.0.9d

\*Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading", D.C. Trumbore, *Environmental Progress*, Vol. 18, No. 4, Winter 1999, pp. 250-259. (Included as TSD Appendix B).

**TSD Appendix A: Emissions Calculations**  
**Tank EU NMT VOC and Particulate Emission Factor Derivation**

**Company Name:** Owens Corning Roofing & Asphalt, LLC  
**Address City IN Zip:** 128 West 8th Street, Brookville, Indiana 47012  
**Administrative Amendment No:** 047-33628-00005  
**Reviewer:** Doug Logan  
**Date:** 11/5/2013

	Maximum	Limited	Basis
<b>TANK AND LOCAL INFORMATION</b>			
Tank Number	EU NMT	EU NMT	
Product Stored	Modified Laminated Asphalt	Modified Laminated Asphalt	
Tank Color	Silver	Silver	
Tank Height, H <sub>S</sub> (ft)	4	4	Provided by Source
Tank Diameter, D (ft)	3	3	Provided by Source
Tank Volume, V (gal)	211	211	Calculated, ~200 gallon tank (7.48 gal/ft <sup>3</sup> )
Tank Volume, V (kBBL)	0.01	0.01	Calculated (0.0001781 kBBL/ft <sup>3</sup> )
Roof Type (Cone/Dome)	CONE	CONE	
<i>Cone Roof Parameters</i>			
Tank Roof Slope (default 0.0625), S <sub>R</sub> (ft/ft)	0.001	0.001	Default
<i>Dome Roof Parameters</i>			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T <sub>AA</sub> (°F)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T <sub>B</sub> (°F)	320.0	320.0	Assumed to be same temperature as EU 2.2 and EU 2.3.
Storage Temp., T <sub>B</sub> (°R)	780.0	780.0	Calculated (T(°R) = T(°F) + 460)
Local Atmospheric Pressure., P <sub>A</sub> (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M <sub>v</sub> ) (lb/lb-mol)	84	84	Specification for oxidized asphalt
Throughput, Q (gal/yr)	743,774	743,774	Maximum based on 200 gal/min maximum capacity. No FESOP limit.
Throughput, Q (bbl/yr)	17,709	17,709	Converted using 7.48 gal/ft <sup>3</sup> and 0.1781 bbl/ft <sup>3</sup>
% of Year Used	100	100	Worst case
Paint Solar Absorptance, α (dimensionless) Table 7.1-6	0.6	0.6	AP-42, Table 7.1-6, Aluminum Diffuse Good Condition
Solar Insulation, I (Btu/ft <sup>2</sup> ·day)	1,298	1,298	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Is Tank Welded? (Y/N)	Y	Y	
Breather Vent Pressure (default = 0.03), P <sub>BP</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P <sub>BV</sub> (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (°F)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H <sub>L</sub> (ft)	2.63	2.63	Updated, assumed 67% of total height (0.67H <sub>LX</sub> ).
Maximum Liquid Height, H <sub>LX</sub> (ft)	3.92	3.92	Updated, assumed 98% of maximum physical height (0.98H <sub>S</sub> ).
<b>TANK TEMPERATURE AND TURNOVER</b>			
Roof Outage, H <sub>RO</sub> (ft)	0.001	0.001	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H <sub>VO</sub> (ft)	1.37	1.37	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T <sub>LA</sub> (°R)	780.0	780.0	AP-42, Ch. 7.1, For insulated tanks, T <sub>LA</sub> is based on T <sub>B</sub>
Daily Ambient Temperature Range, ΔT <sub>A</sub> (°R)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT <sub>V</sub> (°R)	36.06	36.06	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T <sub>LX</sub> (°R)	789.02	789.02	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T <sub>LN</sub> (°R)	770.98	770.98	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Stock Turnover Rate, N (turnovers/yr)	3588.04	3588.04	Calculated, AP-42, Ch. 7.1, Eqns. 1-30 and 1-31
<b>VAPOR PRESSURE</b>			
Vapor Pressure Equation Constant -- alpha	7.0850	7.0850	From Table 2 (Trumbore) for flux asphalt.
Vapor Pressure Equation Constant -- beta	-16.8999	-16.8999	From Table 2 (Trumbore) for flux asphalt.
Vapor Pressure at Maximum Liquid Surface Temperature, P <sub>VX</sub> (psia)	0.166	0.166	(Trumbore): log P <sub>VX</sub> (mmHg) = alpha * log T <sub>LX</sub> (°F) + beta
Vapor Pressure at Average Liquid Surface Temperature, P <sub>VA</sub> (psia)	0.137	0.137	(Trumbore): log P <sub>VA</sub> (mmHg) = alpha * log T <sub>LA</sub> (°F) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P <sub>VN</sub> (psia)	0.112	0.112	(Trumbore): log P <sub>VN</sub> (mmHg) = alpha * log T <sub>LN</sub> (°F) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
<b>STANDING STORAGE LOSSES</b>			
Tank Vapor Space Volume, V <sub>V</sub> (ft <sup>3</sup> )	9.7	9.7	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W <sub>V</sub> (lb/ft <sup>3</sup> )	0.001	0.001	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K <sub>E</sub> (dimensionless)	0.050	0.050	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K <sub>S</sub> (dimensionless)	0.990	0.990	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L <sub>S</sub> (lb/yr)	0.24	0.24	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
<b>WORKING LOSS</b>			
Working Loss Turnover Factor, K <sub>N</sub> (dimensionless)	0.175	0.175	K <sub>N</sub> = (180+N)/6N, for N>36
Working Loss Product Factor, K <sub>P</sub> (dimensionless)	1	1	K <sub>P</sub> = 1 for organic liquids other than crude oils
Total Working Losses, L <sub>W</sub> (lb/yr)	35.6	35.6	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
<b>TOTAL EMISSIONS</b>			
Total HC Emissions, L <sub>T</sub> (lb/yr)	35.8	35.8	Calculated, AP-42, Ch. 7.1, Eqn. 1-1
Total HC Emissions (tpy)	0.018	0.018	1 ton = 2000 lb
PM, PM10, PM2.5, VOC Emission Factor (lb/Mgal)	0.05	0.05	All emissions are assumed to be PM, PM10, PM2.5, and VOC

**Data Sources**

AP-42, Ch. 7.1, Organic Liquid Storage Tanks, 11/06  
TANKS 4.0.9d

"Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading", D.C. Trumbore, *Environmental Progress*, Vol. 18, No. 4, Winter 1999, pp. 250-259. (Included as TSD Appendix B).

**TSD Appendix A: Emissions Calculations**  
**Particulate Emissions from Controlled Processes**

Page 14 of 20 TSD App A

**Company Name:** Owens Corning Roofing & Asphalt, LLC  
**Address City IN Zip:** 128 West 8th Street, Brookville, Indiana 47012  
**Administrative Amendment No:** 047-33628-00005  
**Reviewer:** Doug Logan  
**Date:** 11/5/2013

**Units with Particulate Control Equipment**

Emission Unit Description	Outlet Grain Loading (gr/acf) <sup>1</sup>	Control Device Fan Flow Rate (acfm) <sup>2</sup>	Particulate Control Efficiency (%)	Uncontrolled PM/PM <sub>10</sub> /PM <sub>2.5</sub> Emission Rate (tpy) <sup>3</sup>	Controlled Potential PM/PM <sub>10</sub> /PM <sub>2.5</sub> Emission Rate (tpy) <sup>4</sup>	Controlled Potential PM/PM <sub>10</sub> /PM <sub>2.5</sub> Emission Rate (lb/hr)	Limited PM/PM <sub>10</sub> /PM <sub>2.5</sub> Emission Rate (lb/hr) <sup>5</sup>
Filler Silo #1 (EU 4.1)	0.02	1,070	99%	80.34	0.80	0.18	0.22
Filler Silo #2 (EU 4.2)	0.02	535	99%	40.17	0.40	0.09	0.11
Filler Silo #4 (EU 4.3)	0.02	1,070	99%	80.34	0.80	0.18	0.22
Parting Agent Silo #5 (EU 4.4)	0.02	535	99%	40.17	0.40	0.09	0.11
Filler Silo #3 (EU 4.6)	0.02	535	99%	40.17	0.40	0.09	0.11
Filler Upper Surge Hopper (EU 4.7)	0.02	900	99%	67.58	0.68	0.15	0.19
Filler Lower Surge Hopper (EU 4.8)	0.02	450	99%	33.79	0.34	0.08	0.09
Surfacing Material Silos #1-#6 (EU 4.9)	0.02	12,852	99%	965.00	9.65	2.20	2.64
Surfacing Material Silo #7 (EU 4.10)	0.02	2,000	99%	150.17	1.50	0.34	0.41
Parting Agent Use Bin #1 (EU 4.5), Surfacing Material Receiving Bin (EU 4.11), and Surfacing Material Applicator (EU 7.1)	0.02	7,850	99%	589.42	5.89	1.35	1.61
Filler Receiving Hopper Bin Vent Filter (EU NFH)	0.02	244	99%	18.34	0.18	0.04	0.05
<b>Totals:</b>				<b>2105.50</b>	<b>21.05</b>	<b>4.81</b>	<b>5.76</b>

**Notes**

<sup>1</sup> The outlet grain loading for the filler receiving hopper bin vent filter is based on manufacturer guaranteed technical specifications.

<sup>2</sup> The control device fan flow rate used for the purposes of potential emission calculations is the maximum air flow for the control equipment. This value is based on the manufacturer guaranteed technical specifications.

<sup>3</sup> Uncontrolled PM/PM<sub>10</sub>/PM<sub>2.5</sub> Emission Rate (tons/yr) = Controlled PM/PM<sub>10</sub>/PM<sub>2.5</sub> Emission Rate (tons/yr) / (1 - Bin Vent Filter Control Efficiency (99%))

<sup>4</sup> Controlled Potential PM/PM<sub>10</sub>/PM<sub>2.5</sub> Emission Rate (tons/yr) = Outlet Loading (grains/acf) \* Fan Flow Rate (acfm) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs

<sup>5</sup> Limited Emission Rate PM/PM<sub>10</sub>/PM<sub>2.5</sub> (lb/hr) as requested by the Permittee.

**Appendix A: Emissions Calculation:  
Coater Emissions (EU 6.1)**

Page 15 of 20 TSD App A

Company Name: Owens Corning Roofing & Asphalt, LLC  
Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012  
Administrative Amendment No: 047-33628-00005  
Reviewer: Doug Logan  
Date: 11/5/2013

Particulate Control Efficiency	
EU Description	Control
Asphalt Coater/Surge Tank Fiber Bed Filter	90%

**Coater/Surge Tank (EU 6.1) - Criteria Pollutants Potential Emissions**

Asphalt Shingle Production Rate (tons/yr) = **454,200**

Based on existing FESOP production limit.

Pollutant	Emission Factor <sup>1</sup> (lb/ton)	Reference	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Limited PTE (ton/yr)
H <sub>2</sub> S	2.42E-03	Maximum of Stack Testing Emission Factors at Representative Facilities is Increased by 20%	0.55	0.55	
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	5.00E-03	Emission Factor is based on stack testing conducted on 6/4/2008 with a conservative safety factor and represents controlled emissions. The Limited PTE is based on 95% of the maximum emissions from stack testing at OC Brookville and at representative facilities (0.031 lb/ton).	11.36	1.14	7.04
VOC	9.10E-02	Average of Stack Testing Emission Factors at Representative Facilities is Increased by 3 X the Standard Deviation of the Emission Factors	20.67	20.67	20.67
CO	0.005	OC Brookville Stack Testing, October 2000 (As stated in the existing permit)	1.14	1.14	
SO <sub>x</sub>	0.0025	Stack Testing at a Representative Facility	1.60	1.60	
Lead	2.10E-06	1.2 x Maximum of (Atlanta, Portland Stack Test Emission Factors)	4.77E-04	4.77E-04	
Antimony	3.00E-07	1.2 x (Portland Stack Test Emission Factor)	6.81E-05	6.81E-05	
Arsenic	4.00E-07	1.2 x Maximum of (Atlanta, Portland Stack Test Emission Factors)	9.08E-05	9.08E-05	
Beryllium	2.00E-07	1.2 x (Portland Stack Test Emission Factor)	4.54E-05	4.54E-05	
Cadmium	2.00E-07	1.2 x (Portland Stack Test Emission Factor)	4.54E-05	4.54E-05	
Chromium	2.30E-06	1.2 x Maximum of (Atlanta, Portland Stack Test Emission Factors)	5.22E-04	5.22E-04	
Cobalt	2.20E-06	1.2 x (Atlanta Stack Test Emission Factor)	5.00E-04	5.00E-04	
Manganese	2.20E-06	1.2 x Maximum of (Atlanta, Portland Stack Test Emission Factors)	5.00E-04	5.00E-04	
Nickel	3.30E-06	1.2 x (Portland Stack Test Emission Factor)	7.49E-04	7.49E-04	
Selenium	4.00E-07	1.2 x Maximum of (Atlanta, Portland Stack Test Emission Factors)	9.08E-05	9.08E-05	
1,1,1 Trichloroethane	3.03E-04	1.2 x Maximum of (Atlanta, Jacksonville Stack Test Emission Factors)	6.89E-02	6.89E-02	
Polycyclic Organic Matter	6.45E-05	1.2 x Maximum of (Atlanta, Jacksonville Stack Test Emission Factors)	1.46E-02	1.46E-02	
Total HAPs			8.67E-02		

<sup>1</sup>The emission factors are based on stack testing at OC, Brookville and at representative facilities

**Methodology**

PTE (tpy) = Emission Factor (lb/ton production) \* Maximum Annual Production Rate (tpy) / (2,000 lb/ton)

SO<sub>2</sub> Potential Emissions (tpy) = Potential SO<sub>2</sub> Emissions (tpy) + Potential SO<sub>2</sub> Emissions from H<sub>2</sub>S oxidation.

Controlled PTE (tpy) = Emission Factor (lb/ton production) \* Maximum Annual Production Rate (tpy) x (1 - Control Efficiency (%)).

Limited PTE for PM, PM<sub>10</sub>, and PM<sub>2.5</sub> is based on a limit of 0.031 lb/ton, which is based on stack testing at OC, Brookville and at representative facilities.

Limited PTE for VOC is based on a limit of 0.091 lb/ton, which is based on stack testing at OC, Brookville and at representative facilities.

**Appendix A: Emissions Calculations**  
**Surfacing Material Applicator (EU 7.1) and Cooling Section (EU 7.2)**

Page 16 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

**EU 7.1 - Surfacing Material Applicator**

Emission Unit	PM/PM <sub>10</sub> /PM <sub>2.5</sub> Emissions <sup>1</sup> (tpy)	VOC Emission Factor <sup>2</sup> (lb/ton product)	Annual Production <sup>3</sup> (tpy)	VOC Emissions <sup>4</sup> (tpy)
Surfacing Material Applicator (EU 7.1)	5.89	0.003	454,200	0.68

**Notes**

<sup>1</sup> The potential PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions are based on the maximum outlet grain loading capacity and control device fan flow rate. These calculations are presented on the "Particulate Emissions from Controlled Processes" page. Page 4 of TSD, Appendix A.

<sup>2</sup> According to FESOP F047-15014-00005, issued on November 12, 2002, the VOC emission factor for EU 7.1 is based on testing performed by Owens Corning at various locations using standard test methods and correlated with the quantity of product produced.

<sup>3</sup> According to the limited annual production.

<sup>4</sup> VOC emissions = Emission factor (lb/ton) x Production limit (tpy)/2,000 lb/ton

**EU 7.2 - Cooling Section**

Emission Unit	PM/PM <sub>10</sub> /PM <sub>2.5</sub> Emission Factor <sup>1</sup> (lb/ton product)	VOC Emission Factor <sup>1</sup> (lb/ton product)	1,1,1 TCE Emission Factor <sup>1</sup> (lb/ton product)	POM Emission Factor <sup>1</sup> (lb/ton product)	Annual Production <sup>2</sup> (tpy)	PM/PM <sub>10</sub> /PM <sub>2.5</sub> Emissions <sup>3</sup> (tpy)	VOC Emissions <sup>3</sup> (tpy)	1,1,1 TCE Emissions <sup>3</sup> (tpy)	POM Emissions <sup>3</sup> (tpy)	Total HAPs Emissions (tpy)
Cooling Section (EU 7.2)	0.07	0.020	0.00055	0.00004	454,200	15.90	4.54	0.13	0.01	0.13

**Notes**

<sup>1</sup> The emission factors for particulate and VOC have been updated and are based on testing performed by Owens Corning at various locations using standard test methods and correlated with the quantity of product produced.

<sup>2</sup> According to FESOP F047-15014-00005, the annual allowable production limit is 454,200 tons per consecutive 12 month period.

<sup>3</sup> VOC/PM emissions = VOC/PM Emission factor (lb/ton) x Production limit (tpy)/2,000 lb/ton

<sup>4</sup> HAP emissions are taken from FESOP F047-15014-00005

**Appendix A: Emissions Calculations**  
**Building Ventilators (ID# 93)**

Page 17 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

**Building Ventilators (ID# 93) Emission Calculations**

The VOC and PM/PM10/PM2.5 emission factors from ventilators (i.e. building roof monitor ventilation extending the length of the production building) were initially developed based on testing performed at Owens Corning facility using standard test methods and were correlated with the quantity of product produced. Pursuant to the testing requirement in the original FESOP (F047-5160-00005), issued on October 22, 1997, compliance testing was successfully performed during October 2000 using opacity as a surrogate test for PM/PM10. Therefore, using the original FESOP emission factors, and subtracting the emissions from the asphalt filler mixer (EU 5.1) which are captured by these factors, to avoid double-counting, the emissions are calculated as follows:

**Emission Factors (EF):**

Asphalt Shingle Production Rate (tons/yr) = 454,200 Based on existing FESOP production limit.

Building Ventilators - Uncontrolled Emission Factors			
Pollutant	Emission Factor <sup>1</sup>	Units	Reference
Total PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.0383	lb/ton production	Includes a 2.1 safety factor times original emission factor.
VOC	0.0998	lb/ton production	
Polycyclic Organic Matter	1.05E-04	lb/ton production	
Lead Compounds	2.65E-04	lb/ton production	
Arsenic Compounds	1.01E-05	lb/ton production	
Chromium Compounds	1.85E-04	lb/ton production	
Cobalt Compounds	6.25E-05	lb/ton production	
Manganese Compounds	2.15E-03	lb/ton production	
Selenium Compounds	1.06E-05	lb/ton production	

<sup>1</sup>The emission factors are based on stack testing at OC, Brookville and at representative facilities and were normalized by the maximum production rate. Emissions from EU 5.1 were subtracted, which was vented indoors during testing.

Building Ventilators - Potential Emissions				
EU ID	EU Description	Pollutant	(tpy)	(lb/hr)
ID# 93	Building Ventilators	Total PM/PM <sub>10</sub> /PM <sub>2.5</sub>	8.69	1.98
		VOC	22.66	5.17
		Polycyclic Organic Matter	0.0238	0.0054
		Lead Compounds	0.0602	0.0137
		Arsenic Compounds	0.0023	0.0005
		Chromium Compounds	0.0420	0.0096
		Cobalt Compounds	0.0142	0.0032
		Manganese Compounds	0.4876	0.1113
		Selenium Compounds	0.0024	0.0005
		Total HAPs	0.6325	0.1444

Potential Emissions (tpy) = Emission Factor (lb/ton production) \* Maximum Annual Production Rate (tpy) x (1 ton/2000 lb)

**Appendix A: Emissions Calculations**  
**Degreasers**

Page 18 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

In order for the degreaser to qualify as an insignificant activity under the listing in 326 IAC 2-7-1(21)(J)(vi)(DD), the source shall use solvents "the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months".

Based on a review of the solvents most widely supplied for the industry by Crystal Clean and Safety-Kleen, the following PTE is based on the following conservative estimates:

The solvent has a maximum density of 6.7 lb/gal.

The solvent used in the degreaser contains 100% VOC and up to 0.2% HAP (tetrachloroethylene).

Utilized MSDS for Safety-Kleen 105 Recycled Solvent as worse case HAP content: <http://www.safety-kleen.com/msds/82310rev8-21-09.pdf>

Number of Degreasers: 2 each using a maximum of 5 gallons of solvent per week

**Uncontrolled Potential Emissions**

6.7	lb/gal x	100	% VOC x	290	gal/yr ÷	2000	lb/ton =	0.97	tons VOC per year
				0.97	tpy VOC x	0.2	% HAP =	0.002	tons HAP per year

**Appendix A: Emissions Calculations**  
**Fugitive Emissions: Paved Roads (ID# 91)**

Page 19 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

**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 (1/2011).

Weight of Empty Haul Truck	25.0 ton	See original 1995 FESOP permit application
Weight of Full Haul Truck	50.0 ton	See original 1995 FESOP permit application
Weight of materials shipped off site	25 Tons	Calculated
Number of Haul Trucks Per Year	18,140 trucks/yr	Maximum throughput divided by amount shipped per truck trip
Number of Haul Trucks Per Day	49.7 trucks/day	Trucks per year divided by 365 days/yr

**Vehicle Information (provided by source)**

Type	Maximum vehicles per day (veh/day)	Maximum One-Way Trips		Maximum One-Way Weight		Maximum One-Way Distance			
		Per Day and Vehicle (trip/day/veh)	Per Day (trip/day)	Per Trip (tons/trip)	Per Day (ton/day)	Per Trip (feet/trip)	Per Trip (mi/trip)	Per Day (miles/day)	Per Year (miles/yr)
Haul Trucks Entering Plant	49.7	1.0	49.7	25.0	1,242.5	2,359	0.447	22.2	8,104.8
Haul Trucks Leaving Plant	49.7	1.0	49.7	50.0	2,486.9	640	0.121	6.0	2,198.8
<b>Total</b>			<b>99.4</b>		<b>3,729.4</b>			<b>28.2</b>	<b>10,303.6</b>

Average Vehicle Weight Per Trip = 

37.5
------

 tons/trip  
Average Miles Per Trip = 

0.28
------

 miles/trip

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

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	37.5	37.5	37.5	tons = average vehicle weight (provided by source)
sL =	10	10	10	g/m <sup>3</sup> = recommended silt loading

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E * [1 - (p/4N)]$  (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor,  $E_{ext} = E_f * [1 - (p/4N)]$   
where p = 

125
-----

 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
N = 

365
-----

 days per year

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	
Unmitigated Emission Factor, $E_f =$	3.607	0.721	0.1771	lb/mile
Mitigated Emission Factor, $E_{ext} =$	3.298	0.660	0.1619	lb/mile
Dust Control Efficiency =	0%	0%	0%	Not applicable, PTE is less than 25 tpy; therefore, no dust control plan is required.

Process	Unmitigated PTE			Mitigated PTE			Controlled PTE		
	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)
Haul Trucks Entering Plant	14.62	2.92	0.72	13.36	2.67	0.66	13.36	2.67	0.66
Haul Trucks Leaving Plant	3.97	0.79	0.19	3.63	0.73	0.18	3.63	0.73	0.18
<b>Total</b>	<b>18.58</b>	<b>3.72</b>	<b>0.91</b>	<b>16.99</b>	<b>3.40</b>	<b>0.83</b>	<b>16.99</b>	<b>3.40</b>	<b>0.83</b>

Note: The combined PTE of fugitive dust is less than 25 tpy; therefore, the source is not required to submit a Fugitive Dust Control Plan containing the information listed in 326 IAC 6-5-5.

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per day (trip/day)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]  
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Unmitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Mitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] \* [1 - Dust Control Efficiency]



**Appendix A: Emissions Calculations**  
**Fugitive Emissions: Unpaved Roads (ID# 91)**

Page 20 of 20 TSD App A

**Company Name: Owens Corning Roofing & Asphalt, LLC**  
**Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012**  
**Administrative Amendment No: 047-33628-00005**  
**Reviewer: Doug Logan**  
**Date: 11/5/2013**

**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 (11/2006).

Weight of Empty Haul Truck	25.0 ton	See original 1995 FESOP permit application
Weight of Full Haul Truck	29.2 ton	See original 1995 FESOP permit application
Weight of materials shipped off site	4 Tons	Calculated
Number of Haul Trucks Per Year	9,070 trucks/yr	Maximum throughput divided by amount shipped per truck trip
Number of Haul Trucks Per Day	49.7 trucks/day	Trucks per year divided by 365 days/yr

**Vehicle Information (provided by source)**

Type	Maximum vehicles per day (veh/day)	Maximum One-Way Trips		Maximum One-Way Weight		Maximum One-Way Distance			
		Per Day and Vehicle (trip/day/veh)	Per Day (trip/day)	Per Trip (tons/trip)	Per Day (ton/day)	Per Trip (feet/trip)	Per Trip (mi/trip)	Per Day (miles/day)	Per Year (miles/yr)
Haul Trucks Entering Plant	49.7	1.0	49.7	25.0	1,242.5	400	0.076	3.8	687.1
Haul Trucks Leaving Plant	49.7	1.0	49.7	29.2	1,449.9	411	0.078	3.9	706.0
<b>Total</b>			<b>99.4</b>		<b>2,692.4</b>			<b>7.6</b>	<b>1,393.2</b>

Average Vehicle Weight Per Trip = 27.1 tons/trip  
Average Miles Per Trip = 0.08 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 13.2.2-1 Sand/Gravel Processing Plant)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	27.1	27.1	27.1	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E \cdot [(365 - P)/365]$  (Equation 2 from AP-42 13.2.2)

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, $E_f$ =	6.945	1.770	0.1770	lb/mile
Mitigated Emission Factor, $E_{ext}$ =	4.567	1.164	0.116	lb/mile
Dust Control Efficiency =	0%	0%	0%	Not applicable, PTE is less than 25 tpy; therefore, no dust control plan is required.

Process	Unmitigated PTE			Mitigated PTE			Controlled PTE		
	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)
Haul Trucks Entering Plant	2.39	0.61	0.06	1.57	0.40	0.04	1.57	0.40	0.04
Haul Trucks Leaving Plant	2.45	0.62	0.06	1.61	0.41	0.04	1.61	0.41	0.04
<b>Total Unpaved Roads</b>	<b>4.84</b>	<b>1.23</b>	<b>0.12</b>	<b>3.18</b>	<b>0.81</b>	<b>0.08</b>	<b>3.18</b>	<b>0.81</b>	<b>0.08</b>
<b>Total Paved Roads</b>	<b>18.58</b>	<b>3.72</b>	<b>0.91</b>	<b>16.99</b>	<b>3.40</b>	<b>0.83</b>	<b>16.99</b>	<b>3.40</b>	<b>0.83</b>
<b>Total Fugitive Emissions from Paved and Unpaved Roads</b>	<b>23.42</b>	<b>4.95</b>	<b>1.04</b>	<b>20.17</b>	<b>4.21</b>	<b>0.92</b>	<b>20.17</b>	<b>4.21</b>	<b>0.92</b>

Note: The combined PTE of fugitive dust is less than 25 tpy; therefore, the source is not required to submit a Fugitive Dust Control Plan containing the information listed in 326 IAC 6-5-5.

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per day (trip/day)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]  
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Unmitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Mitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] \* [1 - Dust Control Efficiency]



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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

**Michael R. Pence**  
Governor

**Thomas W. Easterly**  
Commissioner

### SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Larry Cavins  
Owens Corning Roofing & Asphalt, LLC  
128 West Eighth Street  
Brookville, IN 47012

DATE: November 14, 2013

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

SUBJECT: Final Decision  
Administrative Amendment to a Federally Enforceable State Operating Permit (FESOP)  
047-33628-00005

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:

William Ward, Plant Leader  
Michael P Zimmer, Trinity Consultants  
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 6/13/2013


# Mail Code 61-53

IDEM Staff	VHAUN 11/14/2013 Owens Corning Roofing and Asphalt, LLC 047-33628-00005 FINAL			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handling 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		Larry Cavins Owens Corning Roofing and Asphalt, LLC 128 W. Eighth St. Brookville IN 47012 (Source CAATS)			Confirmed Delivery							
2		William Ward Plant Leader Owens Corning Roofing and Asphalt, LLC 128 W. Eighth St. Brookville IN 47012 (RO CAATS)										
3		Ms. Fairy Geiling 9039 Westview Road Brookville IN 47012 (Affected Party)										
4		Ms. Thelma Gutzwiller 904 Franklin Avenue Brookville IN 47012 (Affected Party)										
5		Ms. Eileen M. Hyde 909 Main Street Brookville IN 47012 (Affected Party)										
6		Mr. James A. Hyde Real Estate and Insurance 564 Main Street Brookville IN 47012 (Affected Party)										
7		Ms. Aurelia Merrell 225 East Ninth Street Brookville IN 47012 (Affected Party)										
8		Mrs. Faith Padgett 1015 Cliff Street Brookville IN 47012 (Affected Party)										
9		Ms. Jennifer F. Stivers 508 East 8th Street Brookville IN 47012 (Affected Party)										
10		Franklin County Commissioners 459 Main Street Brookville IN 47012 (Local Official)										
11		Mr. Gregory Pflum P.O. Box 165 Brookville IN 47012-0165 (Affected Party)										
12		Franklin County Health Department 459 Main St, Courthouse Brookville IN 47012-1405 (Health Department)										
13		Leo & Jean Kruthaupt 924 Franklin Avenue Brookville IN 47012 (Affected Party)										
14		Brookville Town Council 634 Main St. Brookville IN 47012 (Local Official)										
15		Mount Carmel Town Council 4014 State Road 252 Brookville IN 47012 (Local Official)										

Total number of pieces Listed by Sender  <b>14</b>	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.
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# Mail Code 61-53

IDEM Staff	VHAUN 11/14/2013 Owens Corning Roofing and Asphalt, LLC 047-33628-00005 FINAL			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handling Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee
1		Michael P Zimmer, P.E. Trinity Consultants 1717 Dixie Highway Ste. 900 Covington KY 41011 (Consultant)									Remarks
2											
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Total number of pieces Listed by Sender  <b>1</b>	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.
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