INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: August 30, 2013

RE: Owens Corning Roofing and Asphalt, LLC / 047-32917-00005

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

Notice of Decision: Approval - Effective Immediately

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 IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require 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 of 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.dot 6/13/13

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Larry Cavins
Owens Corning Roofing and Asphalt, LLC
128 West 8th Street
Brookville, IN 47012

August 30, 2013

Re: 047-32917-00005
Significant Revision to
FESOP Renewal No. F047-24313-00005

Dear Mr. Cavins:

Owens Corning Roofing and Asphalt, LLC was issued 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 8th Street, Brookville, Indiana. On March 5, 2013, the Office of Air Quality (OAQ) received an application from the source requesting to add PM2.5 emission limits and to change some existing emission limits based on stack test data. The attached Technical Support Document (TSD) provides additional explanation of the changes to the permit. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Attached please find the entire revised permit.

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 Laura Spriggs of my staff at 317-233-5693 or 1-800-451-6027, and ask for extension 3-5693.

Sincerely,

Jenny Acker, Section Chief
Permits Branch
Office of Air Quality

Attachments: Technical Support Document and revised permit

JA/lss

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

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Commissioner

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 by: Jenny Acker, Section Chief Permits Branch Office of Air Quality	Issuance Date: August 30, 2013 Expiration Date: February 11, 2018

TABLE OF CONTENTS

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 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) 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.

(c) 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.

(d) Combustion source flame safety purging on startup.

(e) 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.

(f) 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]

(h) 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 ^{o}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 ^{o}C (68 ^{o}F);

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

(i) 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.

(j) Closed loop heating and cooling systems.

(k) Noncontact cooling tower systems with forced and induced draft not regulated under NESHAP.

(l) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

(m) Process vessel degassing and cleaning to prepare for internal repairs.

(n) Paved and unpaved roads and parking lots with public access, identified as ID# 91.

(o) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

(p) On-site fire and emergency response training approved by the department.

(q) A laboratory as defined in 326 IAC 2-7-1(21)(D).

(r) 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.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) to renew a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, 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)]

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

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

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

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

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

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

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

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

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

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

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

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

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

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

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

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

The Permittee shall implement the PMPs.

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

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

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

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

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

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

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

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The

PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

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

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

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

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

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

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, or Southeast Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

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

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

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

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

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

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

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

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

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

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

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

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

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

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

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

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

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

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

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

(a) All terms and conditions of permits established prior to 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)]

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

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

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

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

(1) That this permit contains a material mistake.

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

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

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

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

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

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

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

and

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

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

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

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

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

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

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

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

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

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

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

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

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) 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]

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

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

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

C.6 Fugitive Dust Emissions [326 IAC 6-4]

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

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

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

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

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

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

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

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

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

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

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

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

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

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

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted

by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

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

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

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

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

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

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

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

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]

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]

(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]

(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]

(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

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:

$E = 55.0 P^{0.11} - 40$ where E = rate of emission in pounds per hour and
P = 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

(a) 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.

(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.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

(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

(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

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)]

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

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

(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

(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

(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

(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

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 than 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

(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 primarly 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]

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**

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

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

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

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

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

FESOP Quarterly Report

Source Name: 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:_____

	Throughput This Month (gallons)			Throughput Previous 11 Months (gallons)			12 Month Total Throughput (gallons)		
Month	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: _____

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:	

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Attachment A
to FESOP Renewal No. F047-24313-00005

40 CFR 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^3 (ft^3).

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

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^3 (lb/ft^3)

$d = K_1 - K_2 T_i$

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

= 66.6147 lb/ft^3 (English Units)

K_2= 0.6176 $kg/(m^3 \cdot °C)$ (metric units)

= 0.02149 $lb/(ft^3 \cdot °F)$ (English Units)

T_i= 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.

(2) During periods for which there are no deviations from any emission limitations (emission limit or operating limit) that apply to you, the compliance report must contain the information specified in paragraphs (b)(2)(i) through (b)(2)(v) of this section.

(i) Company name and address.

(ii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(iii) Date of report and beginning and ending dates of the reporting period.

(iv) A statement that there were no deviations from the emission limitations during the reporting period.

(v) If there were no periods during which the CPMS was out-of-control as specified in §63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

(3) For each deviation from an emission limitation (emission limit and operating limit), you must include the information in paragraphs (b)(3)(i) through (b)(3)(xii) of this section.

(i) The date and time that each deviation started and stopped.

(ii) The date and time that each CPMS was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time and duration that each CPMS was out-of-control, including the information in §63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(vii) A summary of the total duration of CPMS downtime during the reporting period and the total duration of CPMS downtime as a percent of the total source operating time during that reporting period.

(viii) An identification of each air pollutant that was monitored at the affected source.

(ix) A brief description of the process units.

(x) A brief description of the CPMS.

(xi) The date of the latest CPMS certification or audit.

(xii) A description of any changes in CPMS or controls since the last reporting period.

(4) Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report specified in paragraph (b) of this section according to the following dates:

(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.

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

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[a] 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.
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[b] with analysis by SW–846 Method 8270D.

[a] 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.

[b] 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[a] * * *
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[b], and b. Pressure drop across device[b]	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[c]to the ESP	The 3-hour average ESP voltage[c]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.[d]	The monitoring parameters within the operating values established as specified in §63.11562(c)(2).

[a]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.

[b]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.

[c]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).

[d]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.

Citation	Subject	Applies to subpart AAAAAAA
§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.

Citation	Subject	Applies to subpart AAAAAAA
§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.
§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.

Citation	Subject	Applies to subpart AAAAAAA
§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 Renewal No. F047-24313-00005

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 suface.

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 ±15 °C (±25 °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 ±10 °C (±18 °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).

θ=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 °C) (metric units)

= 0.0694 lb/(ft^3 °F) (English Units)

T_i = 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 a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP)

Source Description and Location

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
Significant Permit Revision No.:	047-32917-00005
Permit Reviewer:	Laura Spriggs

On March 5, 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.

Existing Approvals

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; and

(d) Administrative Amendment No.: 047-32491-00005, issued on January 3, 2013.

County Attainment Status

The source is located in Franklin County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]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) $PM_{2.5}$
Franklin County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ 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 $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$, NOx, and SO_2 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 PM10, SO2, NO2, 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 the Existing Source

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

This PTE table is from the cover letter for Administrative Amendment No. 047-32491-00005, issued on January 3, 2013.

	Potential To Emit of the Entire Source Prior to Revision (tons/year)								
Process/ Emission Unit	PM	PM10*	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Process Heating Units (EU 1.1, 1.2, 1.3, and 1.4)	0.60	0.71	20.90	6.01	0.23	3.46	4,977	0.08	0.08 (Hexane)
Hot Oil Heater (EU NOH)	0.01	0.05	4.12E-03	0.34	0.04	0.58	829	0.01	0.01 (Hexane)
Asphalt Storage Tanks (EU 2.1)	1.26	1.26	0.51	--	4.45	2.01	--	negl.	negl.
Adhesive Storage Tanks (EU 2.2 & 2.3)	0.05	0.05	0.05	--	0.18	0.18	--	--	--

	Potential To Emit of the Entire Source Prior to Revision (tons/year)								
Process/ Emission Unit	PM	PM10*	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Adhesive Storage Tanks (EU NMT)	2.04E-10	2.04E-10	0.01	-	7.23E-09	0.05	-	-	-
Mineral Storage Facilities (each controlled by baghouse - EU 4.1 through 4.11, 7.1 & NFH)	21.05	21.05	--	--	0.68	--	--	--	--
Asphalt Filler Mixer (EU 5.1)	0.97	0.97	0.51	--	3.42	2.01	--	--	--
Asphalt Coater & Surge Tank (EU 6.1)	1.61	1.61	1.60	--	20.67	1.14	--	0.02	0.01 (POM)
Cooling Section (EU 7.2)	61.32	61.32	--	--	7.95	--	--	0.58	0.16 (1,1,1 TCE)
Building Ventilators (ID# 93)	8.10	8.10	--	--	45.93	--	--	0.63	0.48 (Mn)
Insignificant Natural Gas Combustion	0.02	0.07	0.01	0.87	0.05	0.73	2,105	0.02	0.02 (Hexane)
Insignificant LPG Combustion	0.06	0.17	2.58E-03	4.31	0.29	2.47	3,672	--	--
Degreasers	--	--	--	--	0.97	--	--	1.94E-03	1.94E-03
Insignificant**** Buffer	4.01	4.01	2.00	2.00	2.00	2.00	2	1.37	1.37
Total PTE of Entire Source	**99.05**	**99.37**	**25.58**	**13.53**	**86.85**	**14.58**	**11,585**	**2.71**	**1.37**
Title V Major Source Thresholds**	NA	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	250	250	250	250	100,000	NA	NA

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
**The 100,000 CO_2e 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.
**** Emissions buffer for insignificant activities including safety flame purging, VOC and HAPs storage containers, machining where an aqueous coolant is used, other cleaners and solvents, brazing equipment, cutting torches, soldering equipment welding equipment, vessel degassing, paved and unpaved roads, blowdown for sight glass; boiler; compressors; pumps; and cooling tower, granule and sand reclaim system, parting agent recycle system, VOC emissions from pumps, valves and flanges, material unloading, ink jet printer, and roll coating application of adhesive to asphalt coated product found to be negligible for VOCs and HAPS.

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no regulated pollutant, excluding GHGs, is emitted at a rate of two hundred fifty (250) tons per year or more, emissions of GHGs are less than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year, 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 Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Owens Corning Roofing & Asphalt. LLC on March 5, 2013, relating to the addition of PM2.5 emission limitations and the revision of other emission calculations at the source. No new equipment is being proposed as part of this revision.

The revision includes the following:

(1) The Permittee has supplied PM2.5 calculations for the entire source and appropriate emission limitations will be added to the permit to ensure that the PM2.5 emissions are below the Part 70 and PSD major source thresholds.

(2) The Permittee has requested to change the PM/PM10/PM2.5 emission factor from 0.071 to 0.031 pounds per ton of asphalt product produced for EU 6.1 based on stack testing data.

(3) The Permittee has requested to change the PM/PM10/PM2.5 emission factor from 0.27 to 0.07 pounds per ton of asphalt product produced for EU 7.2 based on stack testing data.

(4) The Permittee has requested to change the VOC emission factor from 0.035 to 0.020 pounds per ton of asphalt product produced for EU 7.2 based on stack testing data.

(5) The Permittee has requested to change the PM/PM10/PM2.5 emission factor from 0.0357 to 0.0383 pounds per ton of asphalt produced based on stack testing data.

(6) The Permittee has requested to change the VOC emission factor from 0.0973 to 0.0998 pounds per ton of asphalt produced based on stack testing data.

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 Revision

Pursuant to 326 IAC 2-8-11.1(f)(1)(l) and 326 IAC 2-8-11.1(g), this FESOP is being revised through a FESOP Significant Permit Revision because the proposed revision removes a testing requirement and requires adjustment of the FESOP emission limitations.

PTE of the Entire Source After Issuance of the FESOP Revision

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

	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
Process/ Emission Unit	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
~~Process Heating Units (EU 1.1, 1.2, 1.3, and 1.4)~~	~~0.60~~	~~0.71~~		~~20.90~~	~~6.01~~	~~0.23~~	~~3.46~~	~~4,977~~	~~0.08~~	~~0.08 (Hexane)~~
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	829	0.01	0.01 (Hexane)
Asphalt Storage Tanks ~~#1~~ (EU 2.1)	~~1.26~~ **3.59**[1]	~~1.26~~ **3.59**[1]	**3.59**[1]	0.51	--	~~4.45~~ **3.59**[2]	2.01	--	negl.	negl.
~~Adhesive Storage Tanks (EU 2.2 & 2.3)~~	~~0.05~~	~~0.05~~		~~0.05~~	~~--~~	~~0.18~~	~~0.18~~	~~--~~	~~--~~	~~--~~
Adhesive Tank #7 (EU 2.2)	**0.07**[1]	**0.07**[1]	**0.07**[1]	**0.02**	**--**	**0.07**[2]	**0.09**	**--**		**--**
Adhesive Tank #7A (EU2.3)	**0.10**[1]	**0.10**[1]	**0.10**[1]	**0.02**	**--**	**0.10**[2]	**0.09**	**--**	**--**	**--**
~~Adhesive Storage Tanks (EU NMT)~~	~~2.04E-10~~	~~2.04E-10~~		~~0.01~~	~~-~~	~~7.23E-09~~	~~0.05~~	~~-~~	~~-~~	~~-~~
~~Mineral Storage Facilities (each controlled by baghouse - EU 4.1 through 4.11, 7.1 & NFH)~~	~~21.05~~	~~21.05~~		~~--~~	~~--~~	~~0.68~~	~~--~~	~~--~~	~~--~~	~~--~~
Filler Silo #1 (EU4.1)	**0.96**[1]	**0.96**[1]	**0.96**[1]	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Filler Silo #2 (EU4.2)	**0.48**[1]	**0.48**[1]	**0.48**[1]	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)										
Process/ Emission Unit	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Filler Silo #4 (EU 4.3)	**0.96[1]**	**0.96[1]**	**0.96[1]**	--	--	--	--	--	--	--
Parting Agent Silo #5 (EU 4.4)	**0.48[1]**	**0.48[1]**	**0.48[1]**	--	--	--	--	--	--	--
Filler Silo #3 (EU 4.6)	**0.48[1]**	**0.48[1]**	**0.48[1]**	--	--	--	--	--	--	--
Filler Upper Surge Hopper (EU 4.7)	**0.83[1]**	**0.83[1]**	**0.83[1]**	--	--	--	--	--	--	--
Filler Lower Surge Hopper (EU 4.8)	**0.39[1]**	**0.39[1]**	**0.39[1]**	--	--	--	--	--	--	--
Surfacing Material Silos #1-#6 (EU 4.9)	**11.56[1]**	**11.56[1]**	**11.56[1]**	--	--	--	--	--	--	--
Surfacing Material Silo #7 (EU4.10)	**1.80[1]**	**1.80[1]**	**1.80[1]**	--	--	--	--	--	--	--
Parting Agent Use Bin (EU 4.5)	**7.05[1]**	**7.05[1]**	**7.05[1]**	--	--	--	--	--	--	--
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--
Material Surfacing Applicator (EU 7.1)				--	--	**0.68[2]**	--	--	--	--
Filler Hopper (EU-NFH)	**0.22[1]**	**0.22[1]**	**0.22[1]**	--	--	--	--	--	--	--
Asphalt Filler Mixer (EU 5.1)	~~0.97~~ **1.67[1]**	~~0.97~~ **1.67[1]**	**1.67[1]**	0.51	--	~~3.42~~ **1.67[2]**	2.01	--	--	--
Asphalt Coater & Surge Tank (EU 6.1)	~~1.61~~ **7.04[1]**	~~1.61~~ **7.04[1]**	**7.04[1]**	1.60	--	20.67	1.14	--	~~0.02~~ **0.087**	~~0.01 (POM)~~ **0.07 (1,1,1-TCE)**
Cooling Section (EU 7.2)	~~61.32~~ **15.90[1]**	~~61.32~~ **15.90[1]**	**15.90[1]**	--	--	~~7.95~~ **4.54[2]**	--	--	~~0.58~~ **0.13**	~~0.16~~ **0.13** (1,1,1 TCE)
Building Ventilators (ID# 93)	~~8.10~~ **8.69[1]**	~~8.10~~ **8.69[1]**	**8.69[1]**	--	--	~~45.93~~ **22.66[2]**	--	--	0.63	~~0.48~~ **0.49** (Mn)
Insignificant Activities										
~~Insignificant Natural Gas Combustion~~	~~0.02~~	~~0.07~~		~~0.01~~	~~0.87~~	~~0.05~~	~~0.73~~	~~2,105~~	~~0.02~~	~~0.02 (Hexane)~~

	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
Process/ Emission Unit	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
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)**
~~Insignificant~~ LPG **Fired Sources**~~Combustion~~	~~0.06~~ **5.74E-02**	~~0.17~~ **2.01E-01**	**2.01E-01**	~~2.58E-03~~ **2.87E-03**	~~4.31~~ **3.73**	0.29	~~2.47~~ **2.15**	~~3,672~~ **3671.50**	--	--
Degreasers	--	--		--	--	0.97	--	--	1.94E-03	1.94E-03 **(NI)**
Granule and Sand Reclaim System (EU 6.2)[3]	**2.48E-03**	**2.48E-03**	**2.48E-03**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Hot Oil Loss (ID #92)[3]	**--**	**--**	**--**	**--**	**--**	**1.37**	**--**	**--**	**1.37**	**1.37 (NI)**
VOC emissions from pumps, valves, flanges, etc. (ID# 92)[3]	**--**	**--**	**--**	**--**	**--**	**1.40E-02**	**--**	**--**	**1.40E-02**	**1.40E-02 (NI)**
Material Unloading (ID# 94)[3]	**2.55E-02**	**2.55E-02**	**2.55E-02**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Ink Jet Printing[3]	**--**	**--**	**--**	**--**	**--**	**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**	**--**	**--**	**--**
~~Insignificant**~~ ~~Buffer~~	~~4.01~~	~~4.01~~		~~2.00~~	~~2.00~~	~~2.00~~	~~2.00~~	~~2~~	~~1.37~~	~~1.37~~
Other[4]	**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	~~99.05~~ **68.02**	~~99.37~~ **68.37**	**68.29**	~~25.58~~ **28.58**	~~13.53~~ **15.92**	~~86.85~~ **65.52**	~~14.58~~ **17.09**	~~11,585~~ **13,273.3**	~~2.71~~ **4.85**	~~1.37~~ **<10**
Title V Major Source Thresholds**	NA	100	**100**	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	**250**	250	250	250	250	100,000	NA	NA

Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)										
Process/ Emission Unit	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP

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_2e 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.
~~**** Emissions buffer for insignificant activities including safety flame purging, VOC and HAPs storage containers, machining where an aqueous coolant is used, other cleaners and solvents, brazing equipment, cutting torches, soldering equipment welding equipment, vessel degassing, paved and unpaved roads, blowdown for sight glass; boiler; compressors; pumps; and cooling tower, granule and sand reclaim system, parting agent recycle system, VOC emissions from pumps, valves and flanges, material unloading, ink jet printer, and roll coating application of adhesive to asphalt coated product found to be negligible for VOCs and HAPS.~~
[1]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.
[2]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.
[3]Emissions provided by the Permittee.
[4]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 revision, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP permit revision, 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 Revision (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO_2e**	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[1]	3.59[1]	3.59[1]	0.51	--	3.59[2]	2.01	--	negl.	negl.
Adhesive Tank #7 (EU 2.2)	0.07[1]	0.07[1]	0.07[1]	0.02	--	0.07[2]	0.09	--		--
Adhesive Tank #7A (EU2.3)	0.10[1]	0.10[1]	0.10[1]	0.02	--	0.10[2]	0.09	--	--	--
Filler Silo #1 (EU4.1)	0.96[1]	0.96[1]	0.96[1]	--	--	--	--	--	--	--
Filler Silo #2 (EU4.2)	0.48[1]	0.48[1]	0.48[1]	--	--	--	--	--	--	--

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Filler Silo #4 (EU 4.3)	0.96[1]	0.96[1]	0.96[1]	--	--	--	--	--	--	--
Parting Agent Silo #5 (EU 4.4)	0.48[1]	0.48[1]	0.48[1]	--	--	--	--	--	--	--
Filler Silo #3 (EU 4.6)	0.48[1]	0.48[1]	0.48[1]	--	--	--	--	--	--	--
Filler Upper Surge Hopper (EU 4.7)	0.83[1]	0.83[1]	0.83[1]	--	--	--	--	--	--	--
Filler Lower Surge Hopper (EU 4.8)	0.39[1]	0.39[1]	0.39[1]	--	--	--	--	--	--	--
Surfacing Material Silos #1-#6 (EU 4.9)	11.56[1]	11.56[1]	11.56[1]	--	--	--	--	--	--	--
Surfacing Material Silo #7 (EU4.10)	1.80[1]	1.80[1]	1.80[1]	--	--	--	--	--	--	--
Parting Agent Use Bin (EU 4.5)	7.05[1]	7.05[1]	7.05[1]	--	--	--	--	--	--	--
Surfacing Material Receiving Bin (EU 4.11)				--	--	--	--	--	--	--
Material Surfacing Applicator (EU 7.1)				--	--	0.68[2]	--	--	--	--
Filler Hopper (EU-NFH)	0.22[1]	0.22[1]	0.22[1]	--	--	--	--	--	--	--
Asphalt Filler Mixer (EU 5.1)	0.32[1]	0.32[1]	0.14[1]	0.51	--	1.30[2]	2.01	--	--	--
Asphalt Coater & Surge Tank (EU 6.1)	7.04[1]	7.04[1]	7.04[1]	1.60	--	20.67[2]	1.14	--	0.087	0.07 (1,1,1-TCE)
Cooling Section (EU 7.2)	15.90[1]	15.90[1]	15.90[1]	--	--	4.54[2]	--	--	0.13	0.13 (1,1,1-TCE)
Building Ventilators (ID# 93)	8.69[1]	8.69[1]	8.69[1]	--	--	22.66[2]	--	--	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 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)[3]	2.48E-03	2.48E-03	2.48E-03	--	--	--	--	--	--	--
Hot Oil Loss (ID #92)[3]	--	--	--	--	--	1.37	--	--	1.37	1.37 (NI)
VOC emissions from pumps, valves, flanges, etc. (ID# 92)[3]	--	--	--	--	--	1.40E-02	--	--	1.40E-02	1.40E-02 (NI)

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Material Unloading (ID# 94)[3]	2.55E-02	2.55E-02	2.55E-02	--	--	--	--	--	--	--
Ink Jet Printing[3]	--	--	--	--	--	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[4]	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**	**65.52**	**17.09**	**13,273.3**	**4.85**	**<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_2e 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.
[1]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.
[2]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.
[3]Emissions provided by the Permittee.
[4]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 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).

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the source shall comply with the emission limits below. *Note: Emission limits marked with "*" indicate new emission limits that have been established as part of this permit revision. Emission limits marked with "**" indicate emission limits that have been revised as part of this permit revision.*

(1) 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.

(2) 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.

(3) 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*

(4) 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.

(5) 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**

(6) 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 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 (a), 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.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this proposed revision.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

Compliance Assurance Monitoring (CAM)

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

State Rule Applicability Determination

The following is a discussion of the state rule applicability to the proposed revision:

(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 Revision 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 Revision 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.

Degreasing Operations

(h) 326 IAC 8-3 (Organic Solvent Degreasing Operations)
On January 30, 2013, amendments to 326 IAC 8-3 (Organic Solvent Degreasing Operations) were published, effective March 1, 2013. 326 IAC 8-3-2 was revised and the Permittee is now subject to 326 IAC 8-3-8 on and after January 1, 2015. *Note: No changes to the degreasing operations have occurred. The rule language has been revised.* The rule requirements are described below:

(1) 326 IAC 8-3-2 (Cold Cleaner Degreaser Control Equipment and Operating Requirements)
Pursuant to 326 IAC 8-3-2(a), the Permittee shall:

(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 subdivisions (C), (D), (F), and (G).

(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.

(2) 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers)
Pursuant to 326 IAC 8-3-8(a)(2), on and after January 1, 2015, the Permittee shall comply with the following:

(A) Material requirements are as follows:
No person shall 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).

(B) Record keeping requirements are as follows:
The Permittee shall maintain the following records:

(i) The name and address of the solvent supplier.

(ii) The date of purchase (or invoice/bill date of contract servicer indicating service date).

(iii) The type of solvent purchased.

(iv) The total volume of the solvent purchased.

(v) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(C) All records required shall be:

(i) Retained on-site or accessible electronically from the site for the most recent three (3) year period; and

(ii) Reasonably accessible for an additional two (2) year period.

Compliance Determination, Monitoring and Testing Requirements

(a) There are no new compliance determination or monitoring requirements applicable to this proposed revision.

(b) There are no new testing requirements applicable to this proposed revision.

The PM10 testing requirement for EU 6.1 has been removed since previous testing has shown that the emissions from this unit are well below the emission limit and since the unrestricted potential to emit of the unit is relatively low. Compliance monitoring requirements shall still be required to ensure that the control device is working properly. PM testing is still required for EU 6.1 pursuant to 40 CFR 60, Subpart UU and 40 CFR 63, Subpart AAAAAAA.

Proposed Changes

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 ~~strikethrough~~ text and new language appears as **bold** text:

(1) Throughout the permit, typographical and grammatical errors have been corrected. Additionally, changes to language for clarification or to align with the current preferred permit language conventions have been made.

(2) Section B - Annual Compliance Certification has been revised to remove a statement that is only applicable to initial certifications.

(3) Section B - Emergency Provisions has been revised to include the contact information for the Southeast Regional Office.

(4) Section C - Instrument Specifications has been revised to include a statement related to the requirements for the analog instrument.

(5) Section C - General Reporting Requirements has been revised to remove paragraphs (e), (f), and (g) since these are only applicable to PSD and Emission Offset major sources.

(6) The requirements of 40 CFR 60, Subpart UU have been removed from Sections D.2 and D.3. A new Section E.2 has been created, which lists the units subject to the rule and the applicable provisions as well as the testing required under 40 CFR 60, Subpart UU. The entire rule is included as Attachment B to the permit.

(7) Condition D.3.2 has been revised to list out the PM, PM10, and PM2.5 emission limits in terms of pounds per hour. The PM and PM10 limits have been increased at the request of the Permittee. The PM2.5 limits are new as part of this permit revision.

(8) Condition D.3.3 has been revised to include the PM, PM10, PM2.5, and VOC limits (in lb/ton of asphalt produced) for EU 6.1, EU 7.1, EU 7.2, and ID# 93 in a table. The PM and PM10 limits for EU 6.1, EU 7.2, and ID# 93 and the VOC limits for EU 7.2 and ID# 93 reflect revised limitations based on testing data provided by the Permittee. The PM2.5 emission limits are new as part of this permit revision.

(9) Condition D.3.6 - Testing Requirements was removed. The testing requirements under 40 CFR 63, Subpart AAAAAAA and 40 CFR 60, Subpart UU have been moved to Sections E.1 and E.2, respectively. The PM10 testing requirement for EU 6.1 is no longer being required as discussed in the Compliance Determination, Monitoring and Testing Requirements section of this technical support document.

(10) Condition D.3.9 (previously D.3.10) has been revised to include a record keeping requirement for the production of asphalt products to establish compliance with the production limit in Condition D.3.3(a). Additionally, a new Reporting Requirements condition has been added to report the compliance status with Condition D.3.3(a).

(11) Condition D.5.2 was revised to reflect the rule changes for 326 IAC 8-3-2 as described in the State Rule Applicability Determination section of this technical support document. Additionally, Conditions D.5.3 and D.5.4 were included to incorporate the new requirements under 326 IAC 8-3-8.

The permit has been revised as follows:

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

(1) * * *

(2) * * *
(3) one (1) 15,000 gallon capacity adhesive tank #7A identified as EU 2.3, approved **in 2010** for installation ~~in 2010~~, rated at 200 gallons per minute, with particulate matter controlled by fiber bed filter, exhausting to one (1) stack identified as S102.

* * *

(c) Mineral storage facilities utilizing pneumatic conveying and controlled by baghouses, consisting of:

(1) * * *
(2) * * *
(3) * * *
(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) * * *
(6) * * *
(7) * * *
(8) * * *
(9) * * *
(10) * * *
(11) * * *

* * *

* * * * *

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

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. ~~The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year.~~ All ~~consequent~~ 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:

* * *

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

(a) * * *

(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) * * *
(2) * * *
(3) * * *
(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
South~~west~~**east** Regional Office phone: (812) **358-2027**~~380-2305~~; fax: (812) **358-2058**~~380-2304~~.

* * *

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

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

(1) * * *
(2) * * *
(3) * * *
(4) * * *
(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.

* * *

* * * * *

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

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

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

* * *

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

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

(AA) All calibration and maintenance records.

(BB) All original strip chart recordings for continuous monitoring instrumentation.

(CC) Copies of all reports required by the FESOP.

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

(AA) The date, place, as defined in this permit, and time of sampling or measurements.

(BB) The dates analyses were performed.

(CC) The company or entity that performed the analyses.

(DD) The analytical techniques or methods used.

(EE) The results of such analyses.

(FF) The operating conditions as existing at the time of sampling or measurement.

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

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

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

(a) * * *
(b) * * *
(c) * * *
(d) * * *
~~(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:~~

~~(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq), for that regulated NSR pollutant, and~~

~~(2) The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).~~

~~(f) The report for project at an existing emissions unit shall be submitted no later than sixty (60) days after the end of the year and contain the following:~~

~~(1) The name, address, and telephone number of the major stationary source.~~

~~(2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.~~

~~(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).~~

~~(4) Any other information that the Permittee wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.~~

~~Reports required in this part 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~~

~~(g) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.~~

* * * * *

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 ~~4.1~~**.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) * * *

* * * * *

SECTION D.2 FACILITY OPERATION CONDITIONS

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

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

(1) * * *
(2) * * *
(3) one (1) 15,000 gallon capacity adhesive tank #7A identified as EU 2.3, approved **in 2010** for installation~~ in 2010~~, rated at 200 gallons per minute, with particulate matter controlled by fiber bed filter, exhausting to one (1) stack identified as S102.

* * *

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

D.2.1 Volatile Organic Compounds (VOC) and Particulate ~~Matter~~ (PM~~, and~~ 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**~~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) **shall not exceed**~~is limited to~~ 1,295,640 gallons per twelve (12) consecutive month~~s~~ **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 ~~for other significant activities listed~~ in **Conditions D.3.2, D.3.3, and D.4.1** ~~Sections D.1, D.3 and D.4~~ and **with the potential to emit from other units at the source,** ~~all insignificant activities~~ shall limit the **source-wide total potential to emit of** PM, PM10**, PM2.5,** and VOC ~~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 Program) and 326 IAC 2-2 (PSD) are not applicable.

* * *

~~Compliance Determination Requirements~~

~~D.2.4 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [40 CFR 60.474] [326 IAC 12]~~

~~Not later than 180 days after the issuance date of this permit, Permit No F047-24313-00005, the Permittee shall perform Opacity testing for operation EU-2.1, utilizing the methods approved by the commissioner. At least once every five 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.~~

* * *

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

D.2.**4**~~5~~ Visible Emissions Notations

* * *

D.2.**5**~~6~~ 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**~~are~~ 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.**7**~~8~~ Record Keeping Requirements

(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) * * *

(2) Total throughput to asphalt tank~~s~~ #1 (EU 2.1) per month since the last compliance determination period; and

(3) * * *

(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, (~~i.~~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, (~~i.~~e.**g.,** the process did not operate that day).

D.2.**8**~~9~~ Reporting Requirements

* * *

~~New Source Performance Standards (NSPS) Requirements [326 IAC 12-1]~~

~~D.2.10 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]~~

~~Pursuant to 40 CFR Part 60, Subpart UU, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1-1, for tank EU 2.1, as specified in Appendix A of 40 CFR Part 60, in accordance with the schedule in 40 CFR Part 60, Subpart UU.~~

~~D.2.11 NSPS (Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture) Requirements [40 CFR Part 60, Subpart UU] [326 IAC 12-1]~~

~~The Permittee shall comply with the provisions of 40 CFR Part 60, Subpart UU, which are incorporated by reference as 326 IAC 12-1, for tank EU 2.1, as specified as follows:~~

~~§ 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 suface.~~

~~*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.~~

~~...~~

~~(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.~~

~~...~~

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

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

(c) Mineral storage facilities utilizing pneumatic conveying and controlled by baghouses, consisting of:

(1) * * *
(2) * * *
(3) * * *
(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;

* * *

* * *

D.3.2 Particulate ~~Matter~~ (PM**,** ~~and~~ 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

~~PM and PM10 emitted from the control device of each facility shall be limited 0.02 grains per dry standard cubic foot of exhaust gas. This limitation is equivalent to the following:~~

~~Emission Unit/Activity~~	~~Control Device Fan Flow Rate (cfm)~~	~~Equivalent PM/PM10 Emissions (lb/hr)~~
~~Filler Silo #1 (EU 4.1)~~	~~1,070~~	~~0.18~~
~~Filler Silo #2 (EU 4.2)~~	~~535~~	~~0.09~~
~~Filler Silo #4 (EU 4.3)~~	~~1,070~~	~~0.18~~
~~Parting Agent Silo #5 (EU 4.4)~~	~~535~~	~~0.09~~
~~Filler Silo #3 (EU 4.6)~~	~~535~~	~~0.09~~
~~Filler Upper Surge Hopper (EU 4.7)~~	~~900~~	~~0.15~~
~~Filler Lower Surge Hopper (EU 4.8)~~	~~450~~	~~0.08~~
~~Surfacing Material Silos #1 through #6 (EU 4.9)~~	~~12,852~~	~~2.02~~
~~Surfacing Material Silo #7 (EU 4.10)~~	~~2,000~~	~~0.34~~
~~Parting Agent Use Bin #1 (EU 4.5), Surfacing Material Receiving Bin (EU 4.11), and Surfacing Material Applicator (EU 7.1)~~	~~7,850~~	~~1.35~~
~~Filler Receiving Hopper Bin Vent Filer (EU NFH)~~	~~244~~	~~0.04~~

Compliance with these limits, combined with **the** PM~~, and~~ PM10**, and PM2.5** limits **in Conditions D.2.1, D.3.3, and D.4.1**~~outlined in Condition D.3.3~~ and **with the potential to emit from other units at the source,**~~ emissions from all insignificant activities,~~ shall limit the **source-wide total potential to emit of** PM~~, and~~ 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. ~~These limits will also render 326 IAC 2-2 not applicable.~~

D.3.3 **Volatile Organic Compounds (**VOC**)** and **Particulate (PM, PM10, and PM2.5) Emission** ~~PM/PM10~~ 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 ~~be limited to~~**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**

~~PM/PM10 emissions from asphalt coater and surge tank (EU 6.1) shall not exceed 0.071 pounds per ton of asphalt product produced.~~

~~(c) VOC emissions from asphalt coater and surge tank (EU 6.1) shall not exceed 0.091 pounds per ton of asphalt product produced.~~

~~(d) VOC emissions from material surfacing applicator (EU 7.1) shall not exceed 0.003 pounds per ton of asphalt product produced.~~

~~(e) PM/PM10 emissions from cooling section (EU 7.2) shall not exceed 0.27 pounds per ton of asphalt product produced.~~

~~(f) VOC emissions from cooling section (EU 7.2) shall not exceed 0.035 pounds per ton of asphalt product produced.~~

~~(g) PM/PM10 emissions from building ventilators (ID# 93) shall not exceed 0.0357 pounds per ton of asphalt product produced.~~

~~(h) VOC emissions from building ventilators (ID# 93) shall not exceed 0.0973 pounds per ton of asphalt product produced.~~

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** ~~for the other significant activities listed in Section D.1, D.2 and D.4~~ **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 ~~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** ~~do not apply. These limits will also render 326 IAC 2-2 (PSD) not applicable~~.

* * *

D.3.5 Particulate Control

In order to ensure compliance with Conditions D.3.1, D.3.2, and D.3.3, ~~T~~**t**he baghouses, bin vent filters and fiber bed filters for PM~~, and~~ PM10**, and PM2.5** control shall be in operation and control emissions from the facilities ~~EU 4.6,~~ EU 4.1 through ~~4.5, EU 4.7 through~~ 4.11, EU 6.1, EU 7.1 and EU NFH at all times that these facilities are in operation.

~~D.3.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [40 CFR 60.474] [326 IAC 12]~~

~~(a) Not later than 180 days after the issuance date of this permit, Permit No. F047-24313-00005, the Permittee shall perform an Opacity testing of the operations EU 4.6, EU 4.2 through EU 4.5, and EU 4.9 through 4.11 utilizing methods approved by the commissioner at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.~~

~~(b) Not later than 180 days after the issuance date of this permit, Permit No. F047-24313-00005, the Permittee shall perform an Opacity test and PM and PM10 testing of the emission stack testing for operation EU 6.1, utilizing methods approved by the~~

~~commissioner at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 includes filterable and condensable PM.~~

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

D.3.**6**~~7~~ Visible Emissions Notations

(a) Visible emissions notations of the respective ~~EU 4.6,~~ EU 4.1 through ~~EU 4.5, EU 4.7 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) * * *

(c) * * *

(d) * * *

(e) * * *

D.3.**7**~~8~~ Parametric Monitoring

(a) The Permittee shall record the pressure drop across the respective baghouses and bin vent filter used in conjunction with each facility (~~EU 4.6,~~ EU 4.1 through ~~EU 4.5, EU 4.7 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 ~~are~~ **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 range**s** 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 ~~this~~ **these** range**s** 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) * * *

D.3.**8**~~9~~ 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**~~10~~ Record Keeping Requirements

(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.

(~~a~~**b**) To document the compliance status with Condition D.3.**6**~~7~~, the Permittee shall maintain records of daily visible emission notations of ~~EU 4.6,~~ EU 4.1 through ~~EU 4.5, EU 4.7 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, (~~i.~~e.**g.,** the process did not operate that day).

(~~b~~**c**) To document the compliance status with Condition D.3.**7**~~8~~, the Permittee shall maintain records once per day of the pressure drop across the fiber bed filter ~~or a~~**and** baghouse**s** controlling ~~EU 4.6,~~ EU 4.1 through ~~EU 4.5, EU 4.7 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, (~~i.~~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) * * *

D.3.10 Reporting Requirements

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).

~~New Source Performance Standards (NSPS) Requirements [326 IAC 12-1]~~

~~D.3.10 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]~~

~~Pursuant to 40 CFR Part 60, Subpart UU, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A -- General Provisions, which are incorporated by reference as 326 IAC 12-1-1, for the asphalt coater/coating surge tank EU 6.1, and the mineral handling and storage facilities (EU 4.6, EU 4.2 through EU 4.5 and EU 4.9 through EU 4.11), as specified in Appendix A of 40 CFR Part 60, in accordance with the schedule in 40 CFR Part 60, Subpart UU.~~

~~D.3.11 NSPS (Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture) Requirements [40 CFR Part 60, Subpart UU] [326 IAC 12-1]~~

~~The Permittee shall comply with the provisions of 40 CFR Part 60, Subpart UU, which are incorporated by reference as 326 IAC 12-1, for the asphalt coater/coating surge tank EU 6.1, and the mineral handling and storage facilities (EU 4.6, EU 4.2 through EU 4.5 and EU 4.9 through EU 4.11), as specified as follows:~~

~~**§ 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 suface.

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.

...

(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]

...

§ 60.474 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.

(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.

...

(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.~~

~~...~~

~~(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.~~

~~...~~

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

* * * * *

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**~~be limited to~~ 28,502,400 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with th~~ei~~~~s~~e limit~~s~~, 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,**~~ for the other significant activities listed in Section D.1, D.2 and D.3~~ shall limit the **source-wide total potential to emit of** PM, PM10**, PM2.5** and VOC ~~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.**~~ not apply. These limits will also render 326 IAC 2-2 (PSD), not applicable.~~

* * *

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).

* * * * *

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** ~~Operations~~), for cold cleaning ~~operations~~ **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 ~~cleaner~~ **degreaser** with a cover**.**~~;~~

(b) Equip the ~~cleaner~~ **degreaser** with a ~~facility~~**device** for draining cleaned parts~~;~~**.**

(c) Close the degreaser cover whenever parts are not being handled in the ~~cleaner~~**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**~~summarizing the operation~~ requirements **in (c), (d), (f), and (g) of this condition.**~~;~~

(f) Store waste solvent only in closed containers.

(~~f~~**g**) **Prohibit the disposal or transfer of waste solvent in such a manner that could allow**~~Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that~~ greater than twenty percent (20%) of the waste solvent (by weight) ~~can~~ **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 than 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

(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)** ~~Five (5) facilities with a common production rate limit, consisting of:~~

~~(2)~~ **O**~~o~~ne (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** ~~except as otherwise specified 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]

* * *

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]

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.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on March 5, 2013.

The operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 047-32917-00005. The staff recommends to the Commissioner that this FESOP Significant Permit Revision be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Laura Spriggs 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) 233-5693 or toll free at 1-800-451-6027 extension 3-5693.

(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

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
Significant Permit Revision No: 047-32917-00005
FESOP Renewal No.: F047-24313-00005
Reviewer: Laura Spriggs

Unrestricted Potential to Emit

	Unrestricted PTE (ton/yr)										
Unit	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	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	0.00	0.34	0.04	0.58	826.17	0.01	0.01	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)	80.34	80.34	80.34	--	--	--	--	--	--	--	N/A
Filler Silo #2 (EU4.2)	40.17	40.17	40.17	--	--	--	--	--	--	--	N/A
Filler Silo #4 (EU 4.3)	80.34	80.34	80.34	--	--	--	--	--	--	--	N/A
Parting Agent Silo #5 (EU 4.4)	40.17	40.17	40.17	--	--	--	--	--	--	--	N/A
Filler Silo #3 (EU 4.6)	40.17	40.17	40.17	--	--	--	--	--	--	--	N/A
Filler Upper Surge Hopper (EU 4.7)	67.58	67.58	67.58	--	--	--	--	--	--	--	N/A
Filler Lower Surge Hopper (EU 4.8)	33.79	33.79	33.79	--	--	--	--	--	--	--	N/A
Surfacing Material Silos #1-#6 (EU 4.9)	965.00	965.00	965.00	--	--	--	--	--	--	--	N/A
Surfacing Material Silo #7 (EU4.10)	150.17	150.17	150.17	--	--	--	--	--	--	--	N/A
Parting Agent Use Bin (EU 4.5)	589.42	589.42	589.42	--	--	--	--	--	--	--	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)	18.34	18.34	18.34	--	--	--	--	--	--	--	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)	11.36	11.36	11.36	1.60	--	20.67	1.14	--	8.67E-02	6.89E-02	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
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	300.69	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	622.12	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	129.61	2.03E-03	1.93E-03	Hexane
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73E+00	2.87E-01	2.15E+00	3671.50	--	--	Not Indicated
Degreasers	--	--	--	--	--	0.97	--	--	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)*	--	--	--	--	--	0.014	--	--	0.014	0.014	Not Indicated
Material Unloading (ID# 94)*	0.026	0.026	0.026	--	--	--	--	--	--	--	N/A
Ink Jet Printing*	--	--	--	--	--	3.58	--	--	--	--	N/A
Adhesive Mix Tank (EU-NMT)	1.79E-02	1.79E-02	1.79E-02	0.013	--	0.018	0.052	--	--	--	N/A
Other**	5	5	5	5	5	5	5	10000	2.5	2.5	Not Indicated
Total	2183.44	2183.79	2183.71	35.92	15.92	96.36	46.26	22273.30	4.85	<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: 047-32917-00005
FESOP Renewal No.: F047-24313-00005
Reviewer: Laura Spriggs

Potential to Emit After Controls

	Controlled PTE (ton/yr)										
Unit	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	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	0.00	0.34	0.04	0.58	826.17	0.01	0.01	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
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	300.69	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	622.12	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	129.61	2.03E-03	1.93E-03	Hexane
LPG Fired Sources	5.74E-02	2.01E-01	2.01E-01	2.87E-03	3.73E+00	2.87E-01	2.15E+00	3671.50	--	--	Not Indicated
Degreasers	--	--	--	--	--	0.97	--	--	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)*	--	--	--	--	--	0.01	--	--	0.01	0.01	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	0.01	--	0.02	0.05	--	--	--	N/A
Other**	5.00	5.00	5.00	5.00	5.00	5.00	5.00	10000.00	2.50	2.50	Not Indicated
Total	88.78	89.13	89.05	35.92	15.92	96.36	46.26	22273.30	4.85	<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 - Limited PTE

Company Name: Owens Corning Roofing & Asphalt, LLC
Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012
Significant Permit Revision No: 047-32917-00005
FESOP Renewal No.: F047-24313-00005
Reviewer: Laura Spriggs

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	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	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
Insignificant Activities											
Fugitive Emissions Building Ventilators (ID# 93)	8.69	8.69	8.69	--	--	22.66	--	--	0.632	0.488	Manganese
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	--	--	Not Indicated
Degreasers	--	--	--	--	--	0.97	--	--	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
Other**	5.00	5.00	5.00	5.00	5.00	5.00	5.00	1000.00	2.50	2.50	Not Indicated
Total	68.02	68.37	68.29	28.58	15.92	65.52	17.09	13273.30	4.85	<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: Emission Calculations
Natural Gas Combustion (Less than 100 MMBtu/hr)

Company Name: Owens Corning Roofing & Asphalt, LLC
Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012
Significant Permit Revision No: 047-32917-00005
FESOP Renewal No.: F047-24313-00005
Reviewer: Laura Spriggs

			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 furances = 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

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

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

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

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

			Criteria Pollutants							GHGs			
			PM*	PM10*	PM2.5*	SO_2	NOx	VOC	CO	CO2	N2O	CH4	CO2e
		Emission Factor (lb/kgal)	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
Significant Permit Revision No: 047-32917-00005
FESOP Renewal No.: F047-24313-00005
Reviewer: Laura Spriggs

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 cacluated 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^3/ppm) x 0.028 m^3/scf x 1 cf/7.48 gallon x 1 lb/453,600 mg x 1000 gal/Mgal

H_2S EF (lb/Mgal) = Worst-case emission factor (1,643.5 ppm) x conversion factor (1.39 mg/m^3/ppm) x 0.028 m^3/scf x 1 cf/7.48 gallon x 1 lb/453,600 mg x 1000 gal/Mgal

SO_2 EF (lb/Mgal) = H_2S EF (lb/Mgal) x Molecular weight of SO_2 (64 lb/lbmol)/ Molecular weight of H_2S (34 lb/lbmol)

Potential Emissions Based on Maximum Throughput

Tank	Maximum Throughput (Mgal/yr)	Unrestricted Potential Emissons (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 Emissons (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**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

	Maximum	Limited	Basis
TANK AND LOCAL INFORMATION			
Tank Number	EU 2.1	EU 2.1	
Product Stored	Oxidized Asphalt	Oxidized Asphalt	
Tank Color	Silver	Silver	
Tank Height, H_S (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/ft3)
Tank Volume, V (kBBL)	0.92	0.92	Calculated (0.0001781 kBBL/ft3)
Roof Type (Cone/Dome)	CONE	CONE	
Cone Roof Parameters			
Tank Roof Slope (default 0.0625), S_R (ft/ft)	0.0625	0.0625	Default
Dome Roof Parameters			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T_{AA} (^oF)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T_B (^oF)	410.0	410.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T_B (^oR)	870.0	870.0	Calculated ($T(^oR) = T(^oF) + 460$)
Local Atmospheric Pressure., P_A (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M_V) (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^3 and 0.1781 bbl/ft^3
% 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^2*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_{BP} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P_{BV} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (^oF)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H_L (ft)	19.26	19.26	Updated, assumed 67% of total height ($0.67H_{LX}$).
Maximum Liquid Height, H_{LX} (ft)	28.74	28.74	Updated, assumed 98% of maximum physical height ($0.98H_S$).
TANK TEMPERATURE AND TURNOVER			
Roof Outage, H_{RO} (ft)	0.16	0.16	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H_{VO} (ft)	10.23	10.23	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T_{LA} (^oR)	870.0	870.0	AP-42, Ch. 7.1, For insulated tanks, T_{LA} is based on T_B
Daily Ambient Temperature Range, ΔT_A (^oR)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT_V (^oR)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T_{LX} (^oR)	877.11	877.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T_{LN} (^oR)	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
VAPOR PRESSURE			
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_{VX} (psia)	0.676	0.676	(Trumbore): $\log P_{VX}$ (mmHg) = alpha * $\log T_{LX}(^oF)$ + beta
Vapor Pressure at Average Liquid Surface Temperature, P_{VA} (psia)	0.599	0.599	(Trumbore): $\log P_{VA}$ (mmHg) = alpha * $\log T_{LA}(^oF)$ + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P_{VN} (psia)	0.529	0.529	(Trumbore): $\log P_{VN}$ (mmHg) = alpha * $\log T_{LN}(^oF)$ + beta
Time Period Evaluated	ANNUAL	ANNUAL	
STANDING STORAGE LOSSES			
Tank Vapor Space Volume, V_V (ft^3)	1807.5	1807.5	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W_V (lb/ft^3)	0.005	0.005	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K_E (dimensionless)	0.043	0.043	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K_S (dimensionless)	0.755	0.755	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L_S (lb/yr)	116.43	116.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
WORKING LOSS			
Working Loss Turnover Factor, K_N (dimensionless)	0.178	0.207	$K_N = (180+N)/6N$, for N>36
Working Loss Product Factor, K_P (dimensionless)	1	1	K_P = 1 for organic liquids other than crude oils
Total Working Losses, L_W (lb/yr)	22357.40	7057.54	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
TOTAL EMISSIONS			
Total HC Emissions, L_T (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

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

	Maximum	Limited	Basis
TANK AND LOCAL INFORMATION			
Tank Number	EU 2.2	EU 2.2	
Product Stored	Modified Laminated Asphalt	Modified Laminated Asphalt	
Tank Color	Silver	Silver	
Tank Height, H_S (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/ft3)
Tank Volume, V (kBBL)	0.23	0.23	Calculated (0.0001781 kBBL/ft3)
Roof Type (Cone/Dome)	CONE	CONE	
Cone Roof Parameters			
Tank Roof Slope (default 0.0625), S_R (ft/ft)	0.0625	0.0625	Default
Dome Roof Parameters			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T_{AA} (^oF)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T_B (^oF)	320.0	320.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T_B (^oR)	780.0	780.0	Calculated ($T(^oR) = T(^oF) + 460$)
Local Atmospheric Pressure., P_A (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M_V) (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^3 and 0.1781 bbl/ft^3
% 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^2*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_{BP} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P_{BV} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (^oF)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H_L (ft)	11.03	11.03	Updated, assumed 67% of total height ($0.67H_{LX}$).
Maximum Liquid Height, H_{LX} (ft)	16.46	16.46	Updated, assumed 98% of maximum physical height ($0.98H_S$).
TANK TEMPERATURE AND TURNOVER			
Roof Outage, H_{RO} (ft)	0.10	0.10	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H_{VO} (ft)	5.87	5.87	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T_{LA} (^oR)	780.0	780.0	AP-42, Ch. 7.1, For insulated tanks, T_{LA} is based on T_B
Daily Ambient Temperature Range, ΔT_A (^oR)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT_V (^oR)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T_{LX} (^oR)	787.11	787.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T_{LN} (^oR)	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
VAPOR PRESSURE			
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_{VX} (psia)	0.160	0.160	(Trumbore): log P_{VX} (mmHg) = alpha * logT_{LX}(^oF) + beta
Vapor Pressure at Average Liquid Surface Temperature, P_{VA} (psia)	0.137	0.137	(Trumbore): log P_{VA} (mmHg) = alpha * logT_{LA}(^oF) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P_{VN} (psia)	0.117	0.117	(Trumbore): log P_{VN} (mmHg) = alpha * logT_{LN}(^oF) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
STANDING STORAGE LOSSES			
Tank Vapor Space Volume, V_V (ft^3)	461.3	461.3	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W_V (lb/ft^3)	0.001	0.001	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K_E (dimensionless)	0.039	0.039	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K_S (dimensionless)	0.959	0.959	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L_S (lb/yr)	8.74	8.74	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
WORKING LOSS			
Working Loss Turnover Factor, K_N (dimensionless)	0.169	0.391	$K_N = (180+N)/6N$, for N>36
Working Loss Product Factor, K_P (dimensionless)	1	1	K_P = 1 for organic liquids other than crude oils
Total Working Losses, L_W (lb/yr)	4866.13	138.29	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
TOTAL EMISSIONS			
Total HC Emissions, L_T (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**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

	Maximum	Limited	Basis
TANK AND LOCAL INFORMATION			
Tank Number	EU 2.3	EU 2.3	
Product Stored	Modified Laminated Asphalt	Modified Laminated Asphalt	
Tank Color	Silver	Silver	
Tank Height, H_S (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/ft3)
Tank Volume, V (kBBL)	0.36	0.36	Calculated (0.0001781 kBBL/ft3)
Roof Type (Cone/Dome)	CONE	CONE	
Cone Roof Parameters			
Tank Roof Slope (default 0.0625), S_R (ft/ft)	0.0625	0.0625	Default
Dome Roof Parameters			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T_{AA} (^oF)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T_B (^oF)	320.0	320.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T_B (^oR)	780.0	780.0	Calculated ($T(^oR) = T(^oF) + 460$)
Local Atmospheric Pressure., P_A (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M_V) (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^3 and 0.1781 bbl/ft^3
% 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^2*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_{BP} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P_{BV} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (^oF)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H_L (ft)	10.51	10.51	Updated, assumed 67% of total height ($0.67H_{LX}$).
Maximum Liquid Height, H_{LX} (ft)	15.68	15.68	Updated, assumed 98% of maximum physical height ($0.98H_S$).
TANK TEMPERATURE AND TURNOVER			
Roof Outage, H_{RO} (ft)	0.13	0.13	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H_{VO} (ft)	5.63	5.63	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T_{LA} (^oR)	780.0	780.0	AP-42, Ch. 7.1, For insulated tanks, T_{LA} is based on T_B
Daily Ambient Temperature Range, ΔT_A (^oR)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT_V (^oR)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T_{LX} (^oR)	787.11	787.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T_{LN} (^oR)	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
VAPOR PRESSURE			
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_{VX} (psia)	0.160	0.160	(Trumbore): log P_{VX} (mmHg) = alpha * logT_{LX}(^oF) + beta
Vapor Pressure at Average Liquid Surface Temperature, P_{VA} (psia)	0.137	0.137	(Trumbore): log P_{VA} (mmHg) = alpha * logT_{LA}(^oF) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P_{VN} (psia)	0.117	0.117	(Trumbore): log P_{VN} (mmHg) = alpha * logT_{LN}(^oF) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
STANDING STORAGE LOSSES			
Tank Vapor Space Volume, V_V (ft^3)	704.8	704.8	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W_V (lb/ft^3)	0.001	0.001	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K_E (dimensionless)	0.039	0.039	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K_S (dimensionless)	0.961	0.961	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L_S (lb/yr)	13.38	13.38	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
WORKING LOSS			
Working Loss Turnover Factor, K_N (dimensionless)	0.171	0.507	$K_N = (180+N)/6N$, for N>36
Working Loss Product Factor, K_P (dimensionless)	1	1	K_P = 1 for organic liquids other than crude oils
Total Working Losses, L_W (lb/yr)	4907.3	179.5	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
TOTAL EMISSIONS			
Total HC Emissions, L_T (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

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

	Maximum	Limited	Basis
TANK AND LOCAL INFORMATION			
Tank Number	EU 5.1	EU 5.1	
Product Stored	Oxidized Asphalt	Oxidized Asphalt	
Tank Color	Silver	Silver	
Tank Height, H_S (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_E (ft)	3.32	3.32	AP-42, Ch. 7.1, Eqn. 1-14.
Tank Effective Diameter, D_E (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/ft3)
Tank Volume, V (kBBL)	0.015	0.015	Calculated (0.0001781 kBBL/ft3)
Roof Type (Cone/Dome)	CONE	CONE	
Cone Roof Parameters			
Tank Roof Slope (default 0.0625), S_R (ft/ft)	0.001	0.001	Set to minimum value to reflect flat roof.
Dome Roof Parameters			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T_{AA} (^oF)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T_B (^oF)	380.0	380.0	Updated, operating temperature of heated tank 1/9/2013, AP-42, Ch. 7.1, Eqn. 1-28.
Storage Temp., T_B (^oR)	840.0	840.0	Calculated ($T(^oR) = T(^oF) + 460$)
Local Atmospheric Pressure., P_A (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M_V) (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^3 and 0.1781 bbl/ft^3
% 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^2*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_{BP} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P_{BV} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (^oF)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H_L (ft)	2.18	2.18	Updated, assumed 67% of total height ($0.67H_{LX}$).
Maximum Liquid Height, H_{LX} (ft)	3.26	3.26	Updated, assumed 98% of maximum physical height ($0.98H_E$).
TANK TEMPERATURE AND TURNOVER			
Roof Outage, H_{RO} (ft)	0.001	0.001	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H_{VO} (ft)	1.66	1.66	AP-42, Ch. 7.1, Eqn. 1-15, Use $H_E/2$ for horizontal tanks
Average Liquid Surface Temperature, T_{LA} (^oR)	840.0	840.0	AP-42, Ch. 7.1, For insulated tanks, T_{LA} is based on T_B
Daily Ambient Temperature Range, ΔT_A (^oR)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT_V (^oR)	28.43	28.43	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T_{LX} (^oR)	847.11	847.11	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T_{LN} (^oR)	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
VAPOR PRESSURE			
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_{VX} (psia)	0.399	0.399	(Trumbore): $\log P_{VX}$ (mmHg) = alpha * $\log T_{LX}(^oF)$ + beta
Vapor Pressure at Average Liquid Surface Temperature, P_{VA} (psia)	0.350	0.350	(Trumbore): $\log P_{VA}$ (mmHg) = alpha * $\log T_{LA}(^oF)$ + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P_{VN} (psia)	0.307	0.307	(Trumbore): $\log P_{VN}$ (mmHg) = alpha * $\log T_{LN}(^oF)$ + beta
Time Period Evaluated	ANNUAL	ANNUAL	
STANDING STORAGE LOSSES			
Tank Vapor Space Volume, V_V (ft^3)	42.7	42.7	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W_V (lb/ft^3)	0.003	0.003	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K_E (dimensionless)	0.040	0.040	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K_S (dimensionless)	0.970	0.970	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L_S (lb/yr)	2.00	2.00	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
WORKING LOSS			
Working Loss Turnover Factor, K_N (dimensionless)	0.167	0.167	$K_N = (180+N)/6N$, for N>36
Working Loss Product Factor, K_P (dimensionless)	1	1	K_P = 1 for organic liquids other than crude oils
Total Working Losses, L_W (lb/yr)	18426.42	3341.57	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
TOTAL EMISSIONS			
Total HC Emissions, L_T (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**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

	Maximum	Limited	Basis
TANK AND LOCAL INFORMATION			
Tank Number	EU NMT	EU NMT	
Product Stored	Modified Laminated Asphalt	Modified Laminated Asphalt	
Tank Color	Silver	Silver	
Tank Height, H_S (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/ft3)
Tank Volume, V (kBBL)	0.01	0.01	Calculated (0.0001781 kBBL/ft3)
Roof Type (Cone/Dome)	CONE	CONE	
Cone Roof Parameters			
Tank Roof Slope (default 0.0625), S_R (ft/ft)	0.001	0.001	Default
Dome Roof Parameters			
Dome Radius (Default-tank diameter, D) (ft)	NA	NA	
Average Ambient Temp., T_{AA} (^oF)	52.2583	52.2583	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Storage Temp., T_B (^oF)	320.0	320.0	Assumed to be same temperature as EU 2.2 and EU 2.3.
Storage Temp., T_B (^oR)	780.0	780.0	Calculated ($T(^oR) = T(^oF) + 460$)
Local Atmospheric Pressure., P_A (psia)	14.326	14.326	Updated with TANKS 4.0.9d for Indianapolis, Indiana
Vapor Molecular Weight, (M_V) (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^3 and 0.1781 bbl/ft^3
% 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^2*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_{BP} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Breather Vent Vacuum (default = -0.03), P_{BV} (psig)	0	0	Default value of 0.03 cannot be used for heated tanks
Diurnal Temperature Swing (^oF)	19.75	19.75	Updated, but not used for heated tanks.
Liquid Height, H_L (ft)	2.63	2.63	Updated, assumed 67% of total height ($0.67H_{LX}$).
Maximum Liquid Height, H_{LX} (ft)	3.92	3.92	Updated, assumed 98% of maximum physical height ($0.98H_S$).
TANK TEMPERATURE AND TURNOVER			
Roof Outage, H_{RO} (ft)	0.001	0.001	AP-42, Ch. 7.1, Eqn. 1-16.
Vapor Space Outage, H_{VO} (ft)	1.37	1.37	AP-42, Ch. 7.1, Eqn. 1-15.
Average Liquid Surface Temperature, T_{LA} (^oR)	780.0	780.0	AP-42, Ch. 7.1, For insulated tanks, T_{LA} is based on T_B
Daily Ambient Temperature Range, ΔT_A (^oR)	19.8	19.8	AP-42, Ch. 7.1, Eqn. 1-12 and Figure 7.1-7 for Indianapolis
Vapor Temperature Range, ΔT_V (^oR)	36.06	36.06	Calculated, AP-42, Ch. 7.1, Eqn. 1-8
Maximum Liquid Surface Temperature, T_{LX} (^oR)	789.02	789.02	Calculated, AP-42, Ch. 7.1, Figure 7.1-17
Minimum Liquid Surface Temperature, T_{LN} (^oR)	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
VAPOR PRESSURE			
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_{VX} (psia)	0.166	0.166	(Trumbore): log P_{VX} (mmHg) = alpha * logT_{LX}(^oF) + beta
Vapor Pressure at Average Liquid Surface Temperature, P_{VA} (psia)	0.137	0.137	(Trumbore): log P_{VA} (mmHg) = alpha * logT_{LA}(^oF) + beta
Vapor Pressure at Minimum Liquid Surface Temperature, P_{VN} (psia)	0.112	0.112	(Trumbore): log P_{VN} (mmHg) = alpha * logT_{LN}(^oF) + beta
Time Period Evaluated	ANNUAL	ANNUAL	
STANDING STORAGE LOSSES			
Tank Vapor Space Volume, V_V (ft^3)	9.7	9.7	Calculated, AP-42, Ch. 7.1, Eqn. 1-3
Stock Vapor Density, W_V (lb/ft^3)	0.001	0.001	Calculated, AP-42, Ch. 7.1, Eqn. 1-21
Vapor Expansion Factor, K_E (dimensionless)	0.050	0.050	Calculated, AP-42, Ch. 7.1, Eqn. 1-7
Vapor Saturation Factor, K_S (dimensionless)	0.990	0.990	Calculated, AP-42, Ch. 7.1, Eqn. 1-20
Total Standing Losses, L_S (lb/yr)	0.24	0.24	Calculated, AP-42, Ch. 7.1, Eqn. 1-2
WORKING LOSS			
Working Loss Turnover Factor, K_N (dimensionless)	0.175	0.175	$K_N = (180+N)/6N$, for N>36
Working Loss Product Factor, K_P (dimensionless)	1	1	K_P = 1 for organic liquids other than crude oils
Total Working Losses, L_W (lb/yr)	35.6	35.6	Calculated, AP-42, Ch. 7.1, Eqn. 1-29
TOTAL EMISSIONS			
Total HC Emissions, L_T (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

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

Units with Particulate Control Equipment

Emission Unit Description	Outlet Grain Loading (gr/acf)[1]	Control Device Fan Flow Rate (acfm)[2]	Particulate Control Efficiency (%)	Uncontrolled $PM/PM_{10}/PM_{2.5}$ Emission Rate (tpy)[3]	Controlled Potential $PM/PM_{10}/PM_{2.5}$ Emission Rate (tpy)[4]	Controlled Potential $PM/PM_{10}/PM_{2.5}$ Emission Rate (lb/hr)	Limited $PM/PM_{10}/PM_{2.5}$ Emission Rate (lb/hr)[5]
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
			Totals:	2105.50	21.05	4.81	5.76

Notes

[1] The outlet grain loading for the filler receiving hopper bin vent filter is based on manufacturer guaranteed technical specifications.

[2] 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.

[3] Uncontrolled $PM/PM_{10}/PM_{2.5}$ Emission Rate (tons/yr) = Controlled $PM/PM_{10}/PM_{2.5}$ Emission Rate (tons/yr) / (1 - Bin Vent Filter Control Efficiency (99%))

[4] Controlled Potential $PM/PM_{10}/PM_{2.5}$ 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

[5] Limited Emission Rate PM/PM10/PM2.5 (lb/hr) as requested by the Permittee.

Appendix A: Emissions Calculations
Coater Emissions (EU 6.1)

Company Name: Owens Corning Roofing & Asphalt, LLC
Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47011
Significant Permit Revision No: 047-32917-00005
FESOP Renewal No.: F047-24313-00005
Reviewer: Laura Spriggs

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[1] (lb/ton)	Reference	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Limited PTE (ton/yr)
H_2S	2.42E-03	Maximum of Stack Testing Emission Factors at Respresentative Facilities is Increased by 20%	0.55	0.55	
$PM/PM_{10}/PM_{2.5}$	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 Respresentative 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	
SOx	0.0025	Stack Testing at a Respresentative 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	8.67E-02	

[1] 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)

SO2 Potential Emissions (tpy) = Potential SO2 Emissions (tpy) + Potential SO2 Emissions from H2S oxidation.

Controlled PTE (tpy) = Emission Factor (lb/ton production) * Maximum Annual Production Rate (tpy) x (1 ton/2000 lb) * [1- Control Efficiency (%)].

Limited PTE for PM, PM10, and PM2.5 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)

Company Name: Owens Corning Roofing & Asphalt, LLC
Address City IN Zip: 128 West 8th Street, Brookville, Indiana 47012
Significant Permit Revision No: 047-32917-00005
FESOP Renewal No.: F047-24313-00005
Reviewer: Laura Spriggs

EU 7.1 - Surfacing Material Applicator

Emission Unit	$PM/PM_{10}/PM_{2.5}$ Emissions [1] (tpy)	VOC Emission Factor[2] (lb/ton product)	Annual Production[3] (tpy)	VOC Emissions [4] (tpy)
Surfacing Material Applicator (EU 7.1)	5.89	0.003	454,200	0.68

Notes

[1] The potential $PM/PM_{10}/PM_{2.5}$ 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.

[2] 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.

[3] According to the limited annual production.

[4] VOC emissions = Emission factor (lb/ton) x Production limit (tpy)/2,000 lb/ton

EU 7.2 - Cooling Section

Emission Unit	$PM/PM_{10}/PM_{2.5}$ **Emission Factor[1] (lb/ton product)**	VOC Emission Factor[1] **(lb/ton product)**	1,1,1 TCE Emission Factor[1] (lb/ton product)	POM Emission Factor[1] (lb/ton product)	Annual Production[2] **(tpy)**	$PM/PM_{10}/PM_{2.5}$ Emissions [3] (tpy)	VOC Emissions [3] **(tpy)**	1,1,1 TCE Emissions [3] (tpy)	POM Emissions [3] (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

[1] The emission factors for particulate and VOC hae 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.

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

[3] VOC/PM emissions = VOC/PM Emission factor (lb/ton) x Production limit (tpy)/2,000 lb/ton

[4] HAP emissions are taken from FESOP F047-15014-00005

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

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

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[1]	Units	Reference
Total $PM/PM_{10}/PM_{2.5}$	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	

[1]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 $PM/PM_{10}/PM_{2.5}$	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

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

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 conversative 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)

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

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)

		Maximum One-Way Trips		Maximum One-Way Weight		Maximum One-Way Distance			
Type	Maximum vehicles per day (veh/day)	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
		Total	99.4		3,729.4			28.2	10,303.6

Average Vehicle Weight Per Trip = 37.5 tons/trip
Average Miles Per Trip = 0.28 miles/trip

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

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	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^2 = recommended silt loading

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	3.607	0.721	0.1771	lb/mile
Mitigated Emission Factor, Eext =	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.

	Unmitigated PTE			Mitigated PTE			Controlled PTE		
Process	PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (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
Total	18.58	3.72	0.91	16.99	3.40	0.83	16.99	3.40	0.83

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)

Company Name: **Owens Corning Roofing & Asphalt, LLC**
Address City IN Zip: **128 West 8th Street, Brookville, Indiana 47012**
Significant Permit Revision No: **047-32917-00005**
FESOP Renewal No.: **F047-24313-00005**
Reviewer: **Laura Spriggs**

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)

		Maximum One-Way Trips		Maximum One-Way Weight		Maximum One-Way Distance			
Type	Maximum vehicles per day (veh/day)	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
		Total	99.4		2,692.4			7.6	1,393.2

Average Vehicle Weight Per Trip = 27.1 tons/trip
Average Miles Per Trip = 0.08 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(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, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	6.945	1.770	0.1770	lb/mile
Mitigated Emission Factor, Eext =	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.

	Unmitigated PTE			Mitigated PTE			Controlled PTE		
Process	PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (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
Total Unpaved Roads	4.84	1.23	0.12	3.18	0.81	0.08	3.18	0.81	0.08
Total Paved Roads	18.58	3.72	0.91	16.99	3.40	0.83	16.99	3.40	0.83
Total Fugitive Emissions from Paved and Unpaved Roads	23.42	4.95	1.04	20.17	4.21	0.92	20.17	4.21	0.92

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]

TSD Appendix B

Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading

Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading

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Title V of the 1990 Clean Air Act requires the accurate estimation of emissions rom all U.S. manufacturing processes, and places the burden of proof for that estimate on the process owner. This paper is published as a tool to assist in the estimation of air emissions from hot asphalt storage tanks and asphalt truck Loading operations. Data are presented on asphalt vapor pressure, vapor molecular weight, and the emission split between volatile organic compounds and particulate emissions that can be used with AP-42 calculation techniques to estimate air emissions from asphalt storage tanks and truck loading operations. Since current AP-42 techniques are not valid in asphalt tanks with active fume removal, a different technique for estimation of air emissions in those tanks, based on direct measurement of vapor space combustible gas content, is proposed. Likewise, since AP-42 does not address carbon monoxide or hydrogen sulfide emissions that are known to be present in asphalt operations, this paper proposes techniques for estimation of those emissions. Finally, data are presented on the effectiveness of fiber bed filters in reducing air emissions in asphalt operations.

INTRODUCTION

The use of asphalt is prevalent throughout recorded history. It is produced in refinery distillation towers and solvent extraction units. Asphalt is modified by several means: reacting with oxygen in blowing operations to produce roofing asphalts, emulsifying to produce an aqueous liquid at ambient temperature, blending with solvents to make asphalt cutback, or blending or even reacting with polymers to make polymer modified asphalt. In all these cases the asphalt is stored in tanks, usually fixed roof tanks, and is loaded into trucks to ship to customers.

Title V of the 1990 Clean Air Act required the accurate estimation of emissions from all U.S. manufacturing processes, and placed the burden of proof for that estimate on the process owner. In response to Title V, Owens Corning analyzed options for estimating emissions from asphalt tanks and loading operations and this paper is the result of that study. In particular, attempts have been made to develop data to be used with existing calculation methods to estimate air emissions in asphalt operations, to develop calculation schemes that work when existing methods cannot be used, and to expand the number of pollutants estimated. The techniques described in this paper have been used by Owens Corning to estimate asphalt emissions from their asphalt plants for many Title V permit applications.

Owens Corning also evaluated appropriate emission factors for the asphalt blowing process and that analysis has been published [1].

The Emission Factor and Inventory Group in the U. S. Environmental Protection Agency's (EPA) Office of Air Quality Planning and Standards develops and maintains a database of emission factors and a series of calculation methods for estimating air emissions from manufacturing processes. These emission factors are published in a series known as AP-42 [2]. One technique published in AP-42 calculates hydrocarbon emissions from a fixed roof tank storing petroleum products [3], and another calculates emissions for loading trucks with petroleum products [4]. These techniques require data on asphalt vapor pressure and the molecular weight of the -asphalt vapor. The calculations result in an estimate of the amount of hydrocarbons emitted from the process. To complete the emission estimate, these hydrocarbons need to be split into particulate emissions (PM) and volatile organic compounds (VOC), and any control device collection or destruction efficiencies need to be applied.

In the AP-42 calculation of emissions from fixed roof tanks it is assumed that the motive force pushing vapor out of the tank comes from either the pumping of liquid into the tank or the expansion of tank contents due to temperature changes. For tanks with an active ventilation system this assumption is invalid and a different method of emission estimation is required. This is especially true if an air sweep is used to control the vapor space composition to

prevent explosive conditions [5,6]. A technique to estimate emissions from these actively controlled tanks is described in the section of this paper on non AP-42 estimates.

AP-42 EMISSION ESTIMATING TECHNIQUES FOR ASPHALT EQUIPMENT

Passive vented hot asphalt tanks: AP-42 for fixed roof petroleum tanks can be used to calculate total hydrocarbon emissions from asphalt and oil tanks that are passively vented to the atmosphere. This AP-42 calculation, simply stated, determines the amount of hydrocarbon in the tank vapor space from the vapor pressure of the material in the tank at the liquid surface temperature, and then calculates the amount of vapor forced out of the tank due to liquid being actively pumped into the tank (working losses), or due to thermal expansion or contraction of tank contents driven by ambient temperature changes (breathing losses). The result is an actual weight of hydrocarbon emissions in a specified time period. A detailed description of the tank calculations is available from th EPAeweb site [3]. The AP-42 calculation requires a vapor pressure versus temperature curve for the asphalt, and also estimates of the vapor phase molecular weight and partition of hydrocarbons into VOC and particulate, in addition to process data like asphalt throughput. temperature. and tank level. If the tank passively breathes through a control device, then the appropriate control efficiency is applied to the VOC and particulate emissions calculated from AP-42.

Hot Asphalt Loading: The AP-42 calculation for hydrocarbon emissions from truck or rail tank car loading of asphalt is done by estimating the amount of evaporation during the loading process. The estimate takes into account the turbulence and vapor liquid contact induced by the method of loading, ie. submerged versus splash loading. The calculation result is an emission related to the number of tons of material loaded into the truck. Vapor pressure versus temperature curve,s temperature of loading, and throughputs are key variables in this calculation. Again, the hydrocarbon emission resulting from this calculation needs to be split into particulatesand VOCs and control device collection and destruction efficiencies need to be applied. A detailed description of the loading calculations is available from the EPA web site [4].

DATA NEEDED FOR APPLICATION OF AP-42 TO ASPHALT EQUIPMENT

Vapor Pressure: Information on asphalt vapor pressure as a function of temperature is not readily available in the literature and its measurement is not common. However, these data are essential to use AP-42 calculations for estimating asphalt tank and loading emissions. Asphalts from different crude oil sources and from different processes will differ in composition and vapor pressure. In the extreme, every residual material used in asphalt processing would need to be measured for vapor pressure at multiple temperatures. This would entail a prohibitive amount of testing for minimal gain in accuracy of emission estimates. To provide a cost effective solution to this problem for its emission calculations, Owens Corning has characterized the vapor pressure of three basic classes of asphalt materials. chosen by their processing history. An estimate of the vapor pressure of each asphalt class was made by measuring asphalts from multiple crude oil source sin each class and using the average vapor pressure at each temperature in a regression to generate one vapor pressure equation for tha class. The three classes of asphalt chosen for this analysis follow.

- Fluxasphalts. or vacuum tower bottoms that can be used in the asphalt blowing process to make specification roofing asphalts. These materials generally have a higher vapor pressure than paving asphalts.
- Paving asphalts, or vacuum tower bottoms that meet paving specifications.
- Oxidized asphalt, or vacuum tower bottoms that have been reacted with oxygen in the asphalt blowing process to increase their softening point and viscosity. Typical softening points are greater than 190°F (88°C) These materials are also called air blown asphalts and are used extensively in the roofing industry. They generally have lower vapor pressure than the other two classes.

Vapor pressure measurements described in this paper were clone by the Phoenix Chemical Lab in Chicago using the Isoteniscope (ASTM D2879).

To facilitate computer calculations it is desirable to develop an equation that accurately describes the relationship of vapor pressure and temperature. Thermodynamic treatment of the dependence of vapor pressure on temperature has led to the Clausius modification of the Clapeyron equation [7].

Clausius Clapeyron Treatment of Vapor Pressure Data

$$\ln P = a + b/T$$

Where: P is the equilibrium vapor pressure of the liquid in question,
a & b are constants. and
T is the absolute temperature of the liquid in question.
Values of a & b depend on the choice of pressure and temperature units.

Table 1 and Figure 1 give an example of the agreement of this equation with vapor pressure data for oxidized asphalts from 13 sources around the country. In Figure 1, vapor pressure of each asphalt is plotted versus temperature to show the differences between asphalt's data to the Clausius Clapeyron each individual asphalt's data to the Clausius Clapeyron relationship. The correlation coefficients in Table 1 indicate that the agreement of this equation to all individual asphalt vapor pressure versus temperature data is excellent, with correlation coefficients for the individual asphalts greater than 0.9999. The agreement is also excellent for the individual asphalts making up the other two asphalt classes. Table 1 also presents the methodology to choose constants to use with the

Table I. Vapor Pressure Data for Oxidized Asphalts

	Temperature (°F[1])			All Data in mm Hg2							
Asphalt	200	250	300	350	400	450	500	550	575	600	r value[3]
Plant A			0.39	2	7.9	26	77	225		550	-0.999922929
Plant C		0.42	2	7.9	26		180	400	670		-0.999934558
Plant H		0.43	2	7.7	25		165	410	590		-0.999939281
Plant I		0.44	1.9	7.2	22	59	140	340		680	-0.999945804
PlantK	0.43	1.7	6.1	18.5	50	115	205	510	680		-0.999660554
PlantM	0.28	1.2	4.6	15	41	97	210	460	640		-0.999948167
PlantN	0.19	0.88	3.5	12	34	85	190	430	590		-0.999965421
PlantP	0.46	1.8	6	17.5	44	96	195	410		710	-0.999948079
Plant0		0.11	0.47	1.7	5.2	13.2	34	74		142	-0.999916578
Plant J		0.16	0.64	2.2	6.2	14.8	36	72		135	-0.999838114
PlantS	0.28	1.05	3.3	9.4	23	50	105	200		350	-0.999986213
PlantS				0.28	1	3.2	10	25		58	-0.999875798
PlantX		0.1	0.4	1.5	4.7	12.5	33	75		152	-0.999930649
Class Standard	0.22	0.91	3.2	9.5	24.9	58.8	127	254	351	477	
Average Vp	0.33	0.75	2.6	7.9	22.3	54.7	122	284	634	347	-0.994026635

13459 b in Clausius Clapeyron curve for average vapor pressure data
18.86 a in Clausius Clapeyron curve for average vapor pressure data

1. 1 °C= (°F - 32) * 5/9
2. 1 Pa = 0.0075 mm Hg

the r value is for the fit of the vapor pressure data to the Clausius Clapeyron Equation

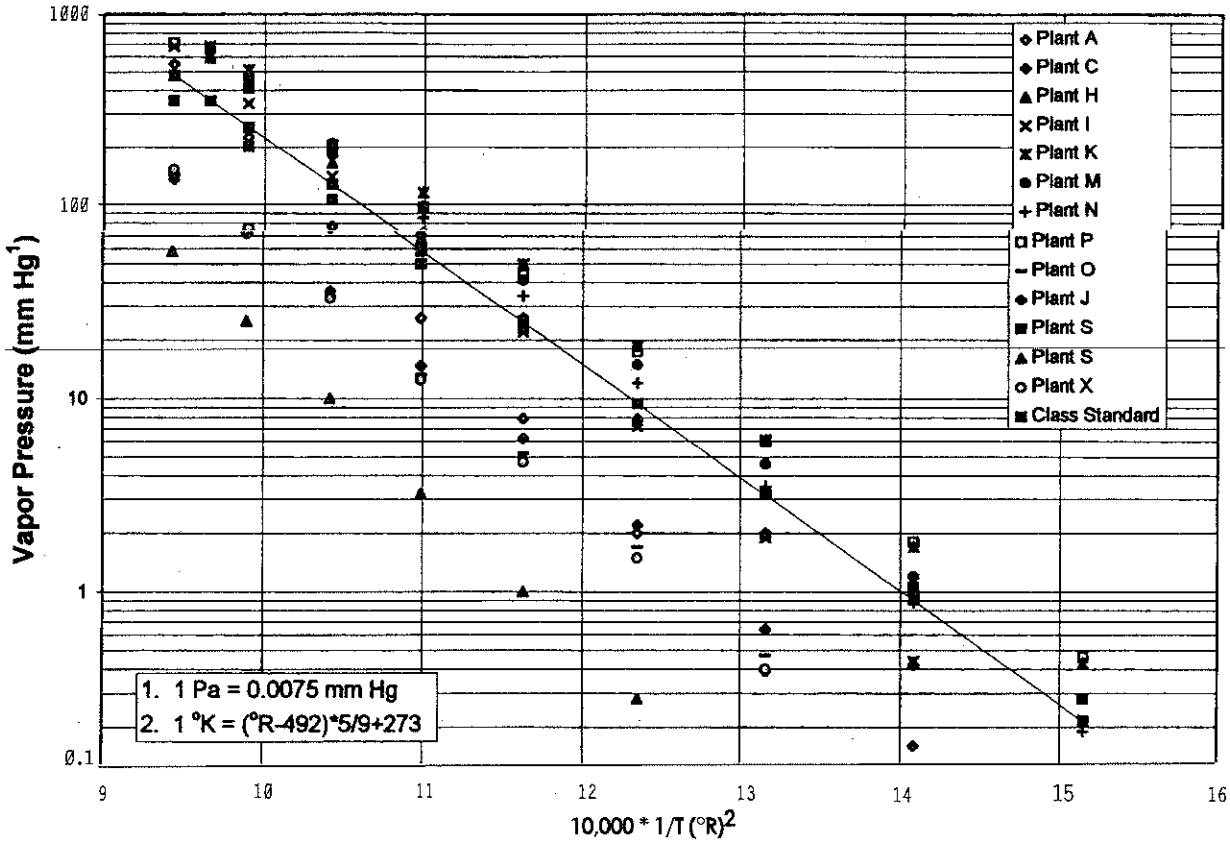

FIGURE 1. Oxidized Asphalt Vapor Pressure Data in Clausius Clapeyron Format

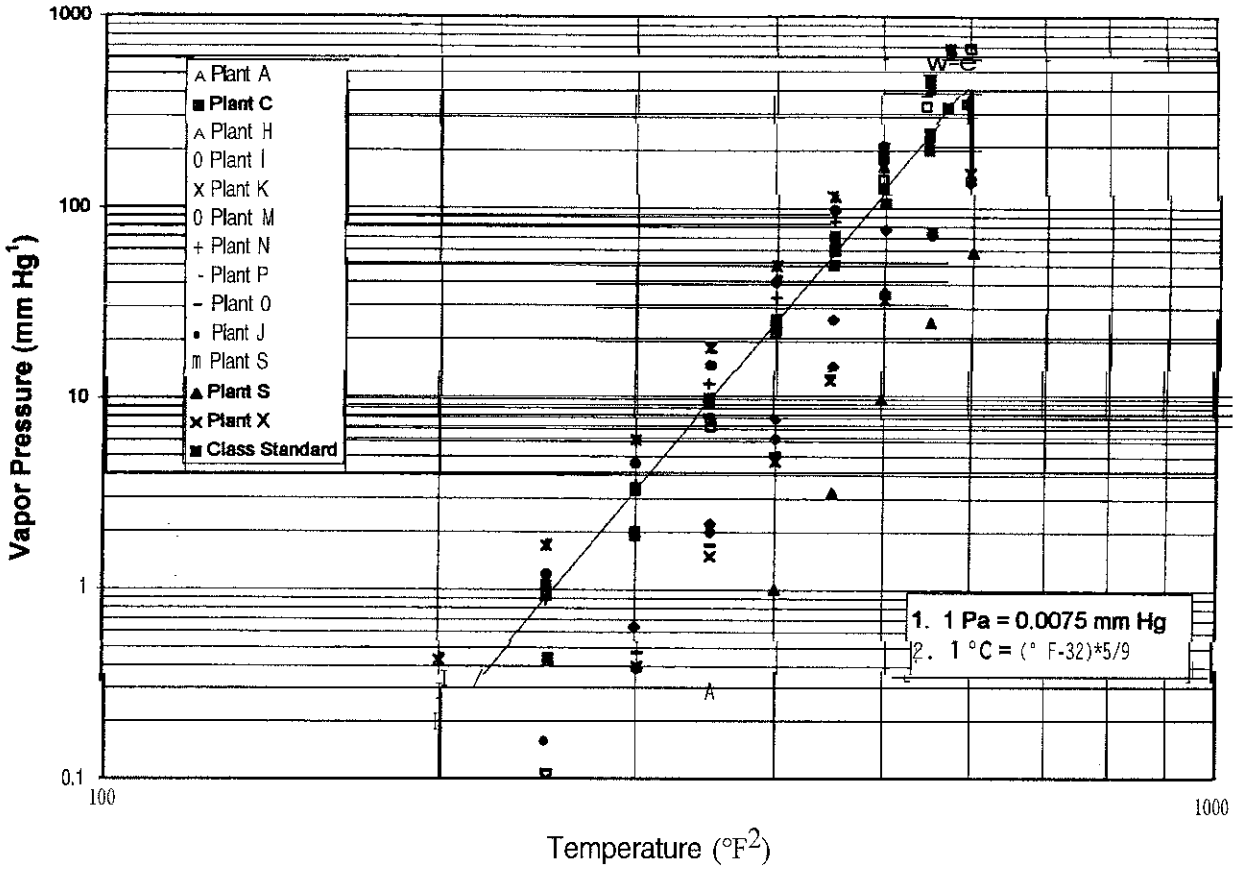

FIGURE 2. Oxidized Asphalt Vapor Pressure Data in Double Log Format

Clausius Clapeyron equation to calculate 3 representative vapor pressure at any temperature for the class of oxidized asphalts. Essentially the technique consists of averaging the vapor pressures of the 13 asphalts at each temperature and then using those averages to curve fit the data to the desired equation. This gives higher values and is more conservative than averaging the vapor pressures after the log transformation is made. The standard curve is developed by using this regression equation to calculate vapor pressures at different temperatures. and for the oxidized class that data is indicated in Table 1 and also by the straight line in Figure 1.

The form of the Clausius Clapeyron equation is somewhat cumbersome to use, especially in graphical form, and so an alternative equation was developed which used a log/log relationship to characterize the data.

Log Log Treatment of Vapor Pressure Data

$$\log Vp = A * \log(T) + B$$

where Vp is the vapor pressure.
T is the temperature (not absolute
A &B are constants

Analyses of oxidized asphalts using this equation to establish the standard curve are presented in Figure 2. The agreement is also very good. with correlation coefficients for the individual asphalts greater than 0.999. Again all three

Table 2. Vapor Pressure Correlations for Asphalts

For the Clausius Clapeyron Equation
$\ln Vp\ (mm\ Hg^{1}) = a - b/T(R^{2})$

Class of Asphalt	a	b	n	Average correlation coefficient
Flux	18.2891	12725.60	10	-0.99976
Paving	20.7962	15032.54	8	-0.99985
Oxidized	18.8642	13458.56	13	-0.99991

For a log log Equation
$\log Vp\ (mm\ Hg) = A * \log T(°F^{3}) + B$

Class of Asphalt	a	b	n	Average correlation coefficient
Flux	7.0850	-16.8999	10	0.99736
Paving	7.8871	-19.0600	8	0.99965
	7.0607	-16.9570	13	0.99981

1. 1 Pa = 0.0075 mm Hg
2. 1 °K = (°R - 492) * 5/9 + 273
3. 1 °C = (°F - 32) * 5/9

Table 3. Analysis of the Molecular Weight of Asphalt Tank Vapor Spaces

Asphalt	Weighted Ave MW	Milligrams of Component in Ctube Sample of Vapor: <C5*	n-C5*	5-6	n-C6	6-7	n-C7	7-8	n-C8	8-9	n-C9	9-10	n-C10	10-11	n-C11	11-12	n-C12	12-13	n-C13	13-14	n-C14	14-15	n-C15	>C15*
Coating – Plant J	83	3.70	2.10	1.80	2.10	0.82	1.70	1.70	0.82	0.21	0.26	0.23	0.05	0.02	0.04	0.01	0.02	0.04	0.01	0.01	0.15	0.07	0.14	0.13
Coating - Plant J	83	7.20	0.29	2.30	3.70	1.90	3.40	3.60	2.00	0.49	0.56	0.50	0.12	0.05	0.20	0.01	0.02	0.00	0.05	0.00	0.23	0.04	0.15	0.07
Satch - Plant J	91	3.00	1.90	2.10	2.90	1.70	3.00	3.70	1.80	0.66	0.73	0.67	0.17	0.11	0.03	0.01	0.01	0.01	0.03	0.01	0.04	0.02	0.05	0.05
Coating - Plant J	97	1.80	1.20	1.10	1.20	0.48	1.00	1.20	0.59	0.16	0.27	0.27	0.09	0.04	0.03	0.02	0.03	0.03	0.10	0.01	0.37	0.10	0.31	0.25
Flux - Plant P	76	2.00	0.70	0.40	0.49	0.34	0.39	0.48	0.15	0.10	0.05	0.03	0.01	0.00	0.01	0.00	0.02	0.00	0.01	0.02	0.02	0.00	0.09	0.14
Flux - Plant P	91	3.60	1.50	1.20	1.70	1.10	1.60	2.40	0.95	0.66	0.37	0.29	0.13	0.09	0.09	0.05	0.06	0.04	0.10	0.01	0.15	0.10	0.21	0.32
Steep - Plant P	93	3.00	3.00	1.50	2.40	1.00	2.00	1.80	0.84	0.41	2.00	1.80	0.07	0.02	0.02	0.01	0.05	0.00	0.01	0.03	0.00	0.00	0.08	0.38
PBS* - Plant S	68	3.60	0.75	0.62	0.41	0.32	0.32	0.28	0.24	0.22	0.15	0.15	0.09	0.05	0.04	0.02	0.02	0.02	0.04	0.00	0.04	0.01	0.02	0.09
Steep - Plant P	85	3.70	5.40	2.70	5.10	1.60	2.30	1.10	0.41	0.12	0.06	0.04	0.01	0.02	0.00	0.01	0.01	0.00	0.10	0.00	0.14	0.00	0.13	1.00
Steep - Plant P	85	5.80	6.40	4.50	6.50	3.90	6.40	4.60	2.40	0.79	0.64	0.23	0.22	0.09	0.12	0.04	0.05	0.02	0.06	0.00	0.05	0.02	0.05	0.06
Steep - Plant P	72	3.20	1.70	0.79	1.30	0.40	0.81	0.49	0.27	0.10	0.09	0.04	0.02	0.04	0.01	0.00	0.01	0.00	0.05	0.00	0.10	0.02	0.08	0.03
PBS* - Plant S	87	3.80	1.00	1.40	1.10	0.75	0.90	1.30	0.64	0.95	0.35	0.39	0.26	0.15	0.10	0.05	0.05	0.45	0.06	0.01	0.07	0.04	0.06	0.07
MW used for Fraction		30	72	79	86	93	100	107	114	121	128	135	142	149	156	163	170	177	184	191	198	205	212	240

*Notes: used 30 (ethane) for MW of fraction less than pentane since when this is large it is heavily weighted to methane.
used the average MW of the two bordering n-alkanes for the intermediate peaks.
used 240 (C17 alkane) for MW of fraction > C15 since concentration decreasing as C15 approached
PBS refers to hard paving blend stock

classes of asphalts show similar agreement,

Vapor Pressure Summary: Table 2 gives a summary of the regression constants to be used in either of the equations discussed above to calculate the vapor pressure for the three classes of asphalt at any temperature. Also indicated are the number of asphalts that were used to develop the equation for each class. and the average correlation coefficient characterizing the agreement of the data to the form of the equation for each individual asphalt in the class.

In AP-42 for tanks, the correct temperature to use in the Table 2 equations is the asphalt surface temperature in the tank. Since the surface temperature is rarely. if ever, known with certainty, the bulk temperature should be used to estimate emissions. In a well mixed tank the bulk temperature will be a good approximation of the surface temperature. Where mixing is not effective the surface will be lower in temperature than the bulk and the use of the bulk temperature will give a conservative estimate of emissions. In AP-42 for loading trucks, the bulk temperature of the tank from which material is being loaded provides a good estimate of the actual loading temperature.

Asphalt Vapor Molecular Weight: Asphalt vapor molecular weight was determined by separation and analysis of the organic species in the vapor spaces of 12 tanks storing different types of asphalt. These profiles were obtained by drawing known volumes of the tank vapor space through a charcoal tube, sealing and freezing the tube to limit loss of the sample, and then desorbing the organic material from the charcoal with carbon disulfide and analyzing with gas chromatography using packed columns and flameionization detectors. Analyses were performed by CHEMIR Laboratory in St. Louis. Quantitative standards were used to identify the amount of individual normal alkanes from n-pentane to n-pentadecane. Peaks eluting between the normal alkanes were assumed to he isomers of the hordering alkanes, especially cyclic isomers of the lower carbon number alkane, and branched or unsaturated isomers of the higher carbon number alkane. The molecular weights for the n-alkane species and molecular weight estimates for the intermediate species were used with the amount of that material measured to calculate a weighted average vapor molecular weight for each tank, and then the twelve tanks were averaged together to get the molecular weight used for hot asphalt vapors in the AP-42 calculations. The result was a molecular weight of 84, which is used with all three classes of asphalts. This analysis is detailed in Table 3. Not enough data were available to assign different values to the three asphalt classes, however, from the table the unblown flux material in two tanks gave molecular weights which bracketed the average. as did the two paving blend stocks.

This analysis gave a lower molecular weight for the vapor space of asphalt tanks than for several petroleum solvents and fuel oils. This seems like a contradiction considering the nature of asphalt as the residuum material collected upon distillation. This contradiction is resolved by considering that asphalt is not a uniform material chemically and that the lower molecular weight materials

Table 4. PM/VOC Partition Data from Owens Corning Testing

Asphalt Plant 0	Tank A	Tank B	Tank c	
VOC Test	0.73	1.16	0.98	lb/hr[1]
PM Test	0.21	0.38	0.30	lb/hr
VOC Fraction	0.78	0.75	0.77	

Koofing Plant § Coater Results:
Measured at different points. Data indicated 22% of total emission (VOC + PM) was PM and 78% was VOC

1. 1 kg/sec = 0.0076 * lb/hr

are preferentially evaporated More importantly. it has also been established that thermal cracking of asphalt in hot storage tanks creates low molecular weight materials which accumulate in the tank vapor spaces [5,6].

Asphalt Liquid Molecular Weight: The actual bulk asphalt molecular weight is not needed for AP-42 calculations of emissions from tanks or loading racks. but is useful in some calculations that are beyond the scope of this paper, for example using Raoult's law for crude estimates of emissions from mixtures of asphalt and other materials. Molecular weight of bulk asphalt is not a well defined material property, both because asphalt is such a complex mixture and because intermolecular interactions in the asphalt create the appearance of high molecular weight in many measurement techniques. The measured molecular weight is usually not truly representative of the covalently bonded molecules, The difficulty in getting accurate asphalt molecular weight measurements is extensively discussed in the literature [8, 9, 10]. The use of Gel Permeation Chromatography[8], Field-Ionization Mass Spectrometry [8]. Vapor Pressure Osmometry [8,9,10], and Freezing Point Depression [10] have all been evaluated as methods for measuring the molecular weight of asphalt or its components. The topic is further complicated for emission calculations by the fact that many of the measurements have been made on fractions of the asphalt and not on the neat asphalt. In general. for very rough estimates, a value of 1000 [8] can be used for the molecular weight of bulk asphalt. This value should be used with the understanding that there is much variation in the true molecular weight and in the tendency for intermolecular interaction due to petroleum crude source and processing conditions.

Partition of hydrocarbon emissions that are particulate and VOC: Because of its heterogeneous nature, asphalt fumes are varied and may have components that are classified as condensed particulates (PM) or as volatile organic compounds (VOCs). It m-as evident in analyzing asphalt fume results that the difference between these two classes of criteria pollutants is really defined by the method used to test for the pollutants. Estimation schemes described in this paper calculate the sum of both (AP-42) or just the VOC component (non-AP-42 technique described below), and the partition needs to be understood to provide the best estimated values of the two pollutants. To that end. tests have been done on both asphalt tank exhausts in an Owens Corning asphalt plant and on the asphalt shingle coater exhausts in an Owens Corning roofing plant using EPA Methods 5 & 25A sampling protocols which define VOC and PM emissions in hydrocarbon fumes. Under conditions specified by the test method some fraction of the fume is captured on a filter and this is defined as a particulate emission, while a fraction of the hydrocarbon emission passes through the filter and this is defined as a VOC emission. The results of the split in the total hydrocarbon fume between VOC and particulate were approximately 78% VOC and 22% particulate in the asphalt equipment. in spite of the basic difference between a shingle coater and a storage tank. Data from these tests are given in Table 4.

NON AP-42 CALCULATIONS TECHNIQUES:

Estimation of VOC and particulate emissions from tanks with fume control: Many asphalt tanks have their fumes actively collected and treated in a control device, either a fiber bed filter or an incinerator. In these tanks it is common at Owens Corning to allow some air to pass through the tank vapor spaces to create an air sweep that controls combustible fumes well below the lower explosion limit (LEL) in order to prevent explosions. Because of the active removal of fumes in these systems, and the bleeding of air into the vapor space. the assumptions underlying the AP-42 tank calculations no longer apply. Specifically the driving force for the flow of fumes out of the tank is no longer just the working and breathing losses. and an alternative method of emission calculation is needed.

Several years ago safety concerns with asphalt tanks prompted Owens Corning to institute the periodic measurement of the combustible gas concentration in all asphalt tank vapor spaces [5]. With the advent of Title V it was recognized that these measurements could be used to estimate VOC emissions. As part of the safety program. techniques were developed to make this routine measurement simple and easy. and the result was the use of Mine Safety Appliance (MSA) combustion meters to quantify the hydrocarbon concentration in terms of the fraction (or %) of the LEL. This technique and the validation of its accuracy has been described in detail in a separate publication [6]. In addition to the combustible gas measurement, a slightly more complicated technique is also described and validated that gives the concentration of ethane, methane. and other light combustible gases separate from propane and larger hydrocarbons. This technique involves using a charcoal tube in the line between the tank and the MSA meter. The charcoal tube adsorbs all propane and higher hydrocarbons [6], with the resultant reading at the MSA meter due only to the lighter

Table 5. Fraction of Measured Combustible Gas that is not VOC or Particulate

	Asphalt Type	
	Oxidized	Unoxidized
Number tanks measured	109	47
Fraction combustible gas that is non-VOC/PM		
Average	0.52	0.23
Standard Deviation	0.12	0.23

materials. The charcoal tube technique was developed to troubleshoot excessive thermal cracking in asphalt tanks as a cause of high combustible gas levels in tank vapor spaces, and it is not routinely performed. It is important for emission calculations since the smaller combustibles found in the tank vapor spaces and measured with the charcoal tube in place (ethane, methane. hydrogen sulfide. and carbon monoxide) are not classified as VOCs because they do not react with ozone in the atmosphere. Nor are they particulate. The other hydrocarbons trapped by the tube and only measured when the charcoal tube is not present. are VOCs or particulate. Table 5 gives the results of testing of vapor spaces of oxidized and unoxidized asphalts for these two types of combustible gas measurements. This analysis was done to see if the routine combustible gas numbers should be adjusted for significant and predictable non-VOC/PM components. For the average tank storing oxidized asphalt. 52% of the combustible gas is non-VOC/PM anti this value n-as used for this class of asphalt. For unoxidized asphalts, both paving and flux,the non-VOC/PM %LELvaried widely and was not nearly as large a fraction of the total. For these asphalts, all of the combustible gas measurement was considered to be either VOC or particulate.

Calculation of VOC & PM from combustible gas readings: Given this background the actual calculation of VOC emissions from combustion meter measurements is as follows:

1 Combustion meter measurements from tank vapor spaces read in %LELare adjusted for the fraction of that reading that is non-VOC/PM. This value depends on the type of asphalt in the tank.
2 The adjusted %LELis then turned into a weight per volume concentration. Hydrocarbons have a relatively constant actual LEL concentration. 45 mg/liter, when expressed on 3 weight per volume basis [11], and this constant is used to make this calculation.
3 The weight per volume concentration from step 2 is multiplied by the fume removal flow (in volume/time) in the tank to get the VOC emission (n-eight/time) going to

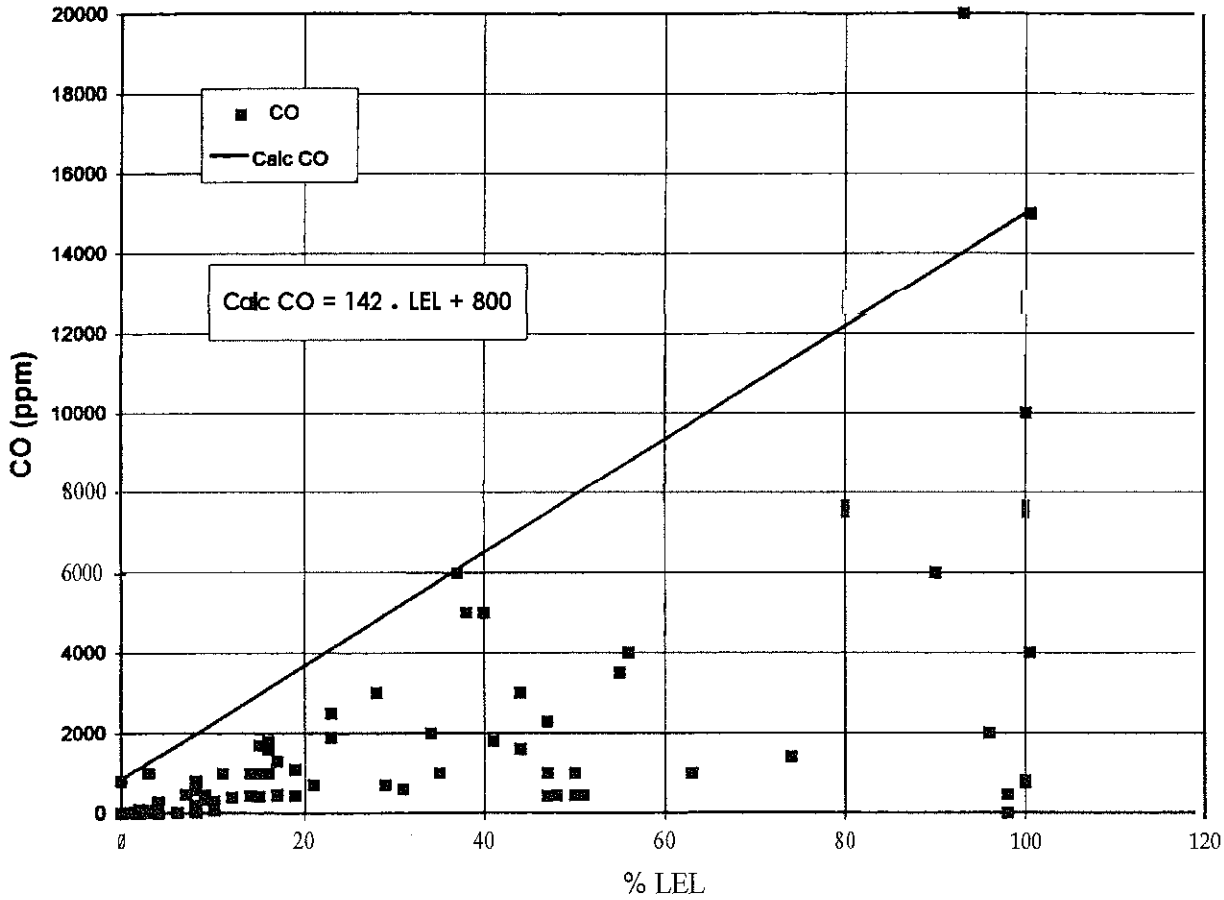

FIGURE 3. Relation of CO with % LEL Data for Oxidized Asphalts

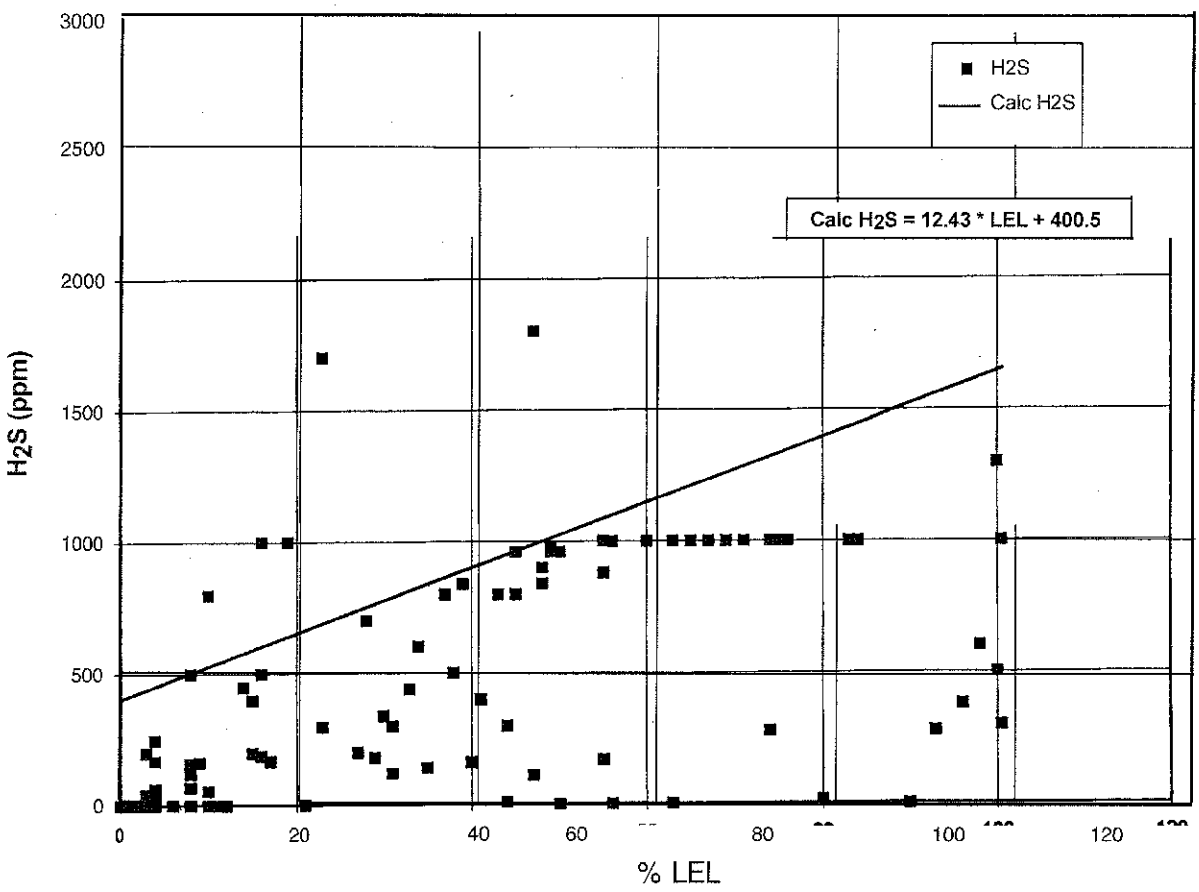

FIGURE 4. Relation of H_2S with % LEL Data for Oxidized Asphalts

a control device. It is consistent that the %LEL method measures VOC and not total hydrocarbon since the fume is drawn through a cotton filter prior to entering the combustion meter, and particulate will be filtered out.

4. The particulate emission going to the control device is estimated from the constant ratio of 22%PM/78%VOC outlined in Table 4.
5. The control device destruction efficiency is applied to both VOC and particulate emissions separately to get the final hydrocarbon based emissions from the tank. This is done after the calculation of PM emissions since the control efficiency for particulate and VOCs can be different depending on the control device.

This methodology's accuracy has been confirmed by tests in an Owens Corning asphalt plant on several passively vented tanks while material was pumped into the tank and vapors forced out by the known pumping rate. Emissions calculated with the method outlined above were compared to tank emissions calculated using AP-42 (valid in theory in this case due to the lack of a ventilation system), and to emissions measured using EPA Method 25A. As can be seen in Table 6 the method based on actual combustion meter tests is similar to the measured VOCs while AP-42 estimates are 3 to 5 times higher.

Table 6. Owens Corning Tank Fume Sampling Results - VOC Emissions

	Tank A	Tank B	Tank C
VOC Method 2jA Test	0.73	1.16	0.98
% LEL Based Estimate	0.72	0.91	0.83
AP-42 Based Estimate	3.17	4.5	3.39

1. 1 kg/sec = 0.0076 *lb/hr

Estimation of CO and H_2S emissions from asphalt tanks: As part of the safety monitoring program mentioned above. Owens Corning has also used detector tubes in asphalt tanks to measure the vapor space concentration of carbon monoxide and hydrogen sulfide [6]. These emissions are usually ignored in asphalt tanks, however. the data Owens Corning has taken clearly indicates their presence in tank vapor spaces and therefore their emission [il. These gases are not routinely measured in Owens Corning asphalt tanks. unlike combustible gas measurements, and thus fresh data are not available for current calculation. nor are data available for every one of our tanks. To apply these data to all tanks. a surrogate measurement is necessary. Since the same mechanism, thermal cracking, that produces light hydrocarbons in asphalt tank vapor spaces also produces carbon monoxide and hydrogen sulfide, the periodic combustion meter measurement of tank vapor spaces was

Table 7. Asphalt Plant 0: Tank Emissions of H_2S and CO

	Tank A	Tank B	Tank C	
H_2S Data				
Actual Test	0.06	0.12	0.15	lb/hr[1]
%LEL based estimate	0.19	0.18	0.20	lb/hr
CO Data				
Actual Test	0.20	0.17	0.23	□ lb/hr
%LEL based estimate	0.74	0.85	0.83	lb/hr

1. 1 kg/sec = 0.0076 * lb/hr

investigated as a surrogate for CO and H_2S Data for CO and H_2S are plotted in Figures 3 and 4. Because of the scatter of data in the correlations a representative line was chosen for each material that was more conservative than nearly all of the data, in other words a line that defined a maximum concentration of CO and H_2S that could be expected in an asphalt tank from the combustion meter measurement. The equations used in the calculation of CO and H_2S concentrations from combustion meter results

CO (ppm) = 142 *%LEL+ 800 for oxidized asphalt
H_2S (ppm) = 12.43 *%LEL + 400.5 for oxidized asphalt

In unoxidized asphalt no such correlation was seen and conservative values of 500 ppm are used for both species.

To estimate an emission from this correlation the CO and H_2S concentrations are multiplied by the flow out of the tank to get emissions. and conversion factors are used to transform this into a weight per time emission. Any control device destruction efficiency is then applied. The emissions using these techniques can be significant. Limited direct measurement in an Owens Corning asphalt plant was consistent with this approach. at least in so far as that the %LEL approach was conservative. H_2S was the closer of the two estimates. Data are presented in Table 7.

One consequence of fume incineration is that one mole of H_2S in the fumes is oxidized to one mole of SO_2 The amount of H_2S oxidized to SO, is the amount of H_2S generated minus both the amount that escapes at the source and the amount that is not incinerated at the control device. or in effect the total uncontrolled H_2S emissions minus the emissions remaining after control. Because of the reaction with oxygen and the molecular weight differences between H_2S and SO_2, every pound (2.2 kg) of H_2S emission is oxidized to 1.88 pounds (4.14 kg) of SO_2 emission.

Loading Rack emissions of CO and H_2S: As in the tanks. %LEL versus CO and H_2S correlations are used to estimate these components in loading rack emissions. Again, with incineration, the H_2S is oxidized to SO_2. Flow out of the tank truck during loading is needed for CO and H_2S calculations. When fumes are collected, that flow can be either the more conservative flow induced by the fume fan, or the lower and more realistic displacement of air by the asphalt being loaded. When no collection takes place that flow is the displacement of air by asphalt being loaded. Combustion meter measurements of %LELs from the tanks used for loading are used for these calculations.

EFFECTIVENESS OF FIBER BED FILTERS FOR ASPHALT FUME EMISSION CONTROL

One device used extensively to control asphalt fumes is a fiber bed filter. Fumes are actively pulled through these filters or passively breathe through these filters. Their first use at Owens Corning was to control opacity to comply with NSPS regulations, and for this application they have proven to he quite effective.

Testing was done on both asphalt tanks and on a roofing line center to determine the control efficiency of fiber bed filters for both VOC and particulate emissions. Data from the testing are summarized in Table 8. In all cases. the particulate collection in the filter exceeded 90% of the emissions in the input stream. This value agrees well with manufacturer's estimate of 95% and with the observation that these devices can eliminate opacity. However, VOC removal varied widely in the tests. With the average removal near zero, and a very large variation, it was decided that no removal of VOC by these filters could be assumed. Although organic oil is collected. this oil is considered part of the particulate fraction of the hydrocarbons in the fumes and not the VOC fraction. Indeed the lack of removal of VOCs by these filters is consistent with the method of partitioning hydrocarbons into VOC and particulate described above -- namely VOCs pass through a testing filter and particulate do not. Based on the effectiveness of these control devices to eliminate opacity it is assumed that particulate greater than 10 micron is captured by the fiber bed filter so that the total particulate emissions from the fiber bed filter are considered to be PM10 emissions.

Fiber bed filters are not considered to he a control device for CO and H_2S in tank or loading rack fume streams.

Table 8. Effectiveness of Fiber Bed Filters for Emission Control from Asphalt Tanks

Plant	Equipment	Pollutant	Control Efficiency
Asphalt 0	Tank 1	VOC	-35.7%
Asphalt 0	Tank 1	VOC	5.7%
Asphalt 0	Tank 1	VOC	43.4%
Asphalt 0	Tank 57	VOC	5.3%
Roofing I	Coater	VOC	0.0%
Asphalt 0	Tank 1	Total Particulate □	95.7%
Asphalt 0	Tank 57	Total Particulate	90.7%
Asphalt 0	Tank 1	Filterable Particulate	100.0%
Asphalt 0	Tank 57	Filterable	100.0%

Table 9. Summary of Data for Calculating Asphalt Tank Emissions

Data Type	Flux Asphalt	Paving Asphalt	Oxidized Asphalt
Clausius Clapeyron constant a for vapor pressure 1	18.2891	20.7962	18.8642
Clausius Clapeyron constant b for vapor pressure 1	12725.6	15032.54	13458.56
Log Log constant A for vapor pressure 2	7.085	7.8871	7.0607
Log Log constant B for vapor pressure 2	-16.8999	-19.06	-16.957
Asphalt vapor molecular weight	use 84 for all types of asphalt		
Asphalt liquid molecular weight	very rough estimate - 1000		
Partition of hydrocarbon fumes into particulate and VOC	use 22% particulate, 78% VOC for all types		
% fumes that are VOC or particulate, versus non VOC/PM	100%	100%	48%
Vapor space carbon monoxide (conservative estimate)ppm	500	500	142* % LEL + 800
Vapor space hydrogen sulfide (conservative estimate) ppm	500	500	12.43*%LEL + 400.5
Fiber bed filter control of VOC	use 0% for all asphalt types		
Fibe4r bed filter control of particulate	use 90% for all asphalt types		

1.ln Vp(mm Hg) = a + b/T(°R) 1 Pa = 0.0075mm Hg, 1 °K = (°R-492)*5/9 +273
2.log Vp (mm Hg) = A*log T(°F) + B 1 °C = (°F - 32)* 5/9

CONCLUSIONS

Estimation of air emissions for asphalt tanks and loading racks can be done using AP-42 calculation methods given appropriate data on asphalt properties. More precise estimates of emissions, or estimates for tanks using ventilation schemes that compromise the AP-42 assumptions, can be done using a simple measurement of the combustible gas in the vapor space. Methods to do this are outlined in the paper. Data that is useful with all these methods are summarized in Table 9. These data are given for three major classes of asphalt: paving, flux and oxidized

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Governor

Thomas W. Easterly
Commissioner

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

TO: Larry Cavins
Owens Corning Roofing and Asphalt, LLC
128 West 8th Street
Brookville, IN 47012

DATE: August 30, 2013

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

SUBJECT: Final Decision
Significant Revision
047-32917-00005

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
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.

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

August 30, 2013

TO: Brookville Town Township Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Owens Corning Roofing and Asphalt, LLC
Permit Number: 047-32917-00005

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

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