



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: August 4, 2009

RE: Walsh & Kelly, Inc. / 089-27021-05255

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.dot12/03/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

Federally Enforceable State Operating Permit Renewal OFFICE OF AIR QUALITY

Walsh & Kelly, Inc. Portable

(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.

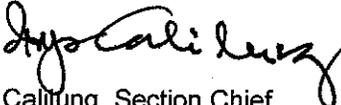
Operation Permit No.: F089-27021-05255	
Issued by:  Iryn Calitung, Section Chief Permits Branch Office of Air Quality	Issuance Date: August 4, 2009 Expiration Date: August 4, 2019

TABLE OF CONTENTS

A. SOURCE SUMMARY.....	5
A.1 General Information [326 IAC 2-8-3(b)]	
A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]	
A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]	
A.4 FESOP Applicability [326 IAC 2-8-2]	
B. GENERAL CONDITIONS	7
B.1 Definitions [326 IAC 2-8-1]	
B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]	
B.3 Term of Conditions [326 IAC 2-1.1-9.5]	
B.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]	
B.5 Severability [326 IAC 2-8-4(4)]	
B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]	
B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]	
B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]	
B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]	
B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]	
B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)] [326 IAC 2-8-5(a)(1)]	
B.12 Emergency Provisions [326 IAC 2-8-12]	
B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]	
B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]	
B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]	
B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]	
B.17 Permit Renewal [326 IAC 2-8-3(h)]	
B.18 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]	
B.19 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]	
B.20 Source Modification Requirement [326 IAC 2-8-11.1]	
B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2] [IC 13-30-3-1]	
B.22 Transfer of Ownership or Operational Control [326 IAC 2-8-10]	
B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16] [326 IAC 2-1.1-7]	
B.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]	
C. SOURCE OPERATION CONDITIONS	16
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]	
C.2 Overall Source Limit [326 IAC 2-8]	
C.3 Opacity [326 IAC 5-1]	
C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]	
C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]	
C.6 Fugitive Dust Emissions [326 IAC 6-4]	
C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-8-10.3]	
C.8 Stack Height [326 IAC 1-7]	
C.9 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]	

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

- C.10 Performance Testing [326 IAC 3-6]

Compliance Requirements [326 IAC 2-1.1-11]

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

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

- C.12 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]
- C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]
- C.14 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)]
[326 IAC 2-8-5(1)]
- C.15 Continuous Compliance Plan [326 IAC 6.8-8-1][326 IAC 6.8-8-8]

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

- C.16 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
- C.17 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]
- C.18 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]
- C.19 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4]
[326 IAC 2-8-5]

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

- C.20 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]
- C.21 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

Portable Source Requirement

- C.22 Relocation of Portable Sources [326 IAC 2-14-4]

Stratospheric Ozone Protection

- C.23 Compliance with 40 CFR 82 and 326 IAC 22-1

D.1. EMISSIONS UNIT OPERATION CONDITIONS..... 26

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

- D.1.1 When Located in Lake County Particulate Matter (PM) [326 IAC 6.8-1-2]
- D.1.2 When Located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo,
or Wayne Counties Particulate Matter (PM) [326 IAC 6.5-1-2]
- D.1.3 Particulate Matter (PM) [326 IAC 2-2]
- D.1.4 Dryer and Mixer FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-3] [326 IAC 2-1.1-5]
- D.1.5 Fuel Limitations [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]
- D.1.6 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1] [326 IAC 7-1.1-2]
- D.1.7 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-3]
- D.1.8 Volatile Organic Compounds (VOC) [326 IAC 8-5-2]
- D.1.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements

- D.1.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]
- D.1.11 Particulate Control
- D.1.12 Sulfur Dioxide (SO₂) Emissions and Sulfur Content

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

- D.1.13 Visible Emissions Notations
- D.1.14 Parametric Monitoring
- D.1.15 Broken or Failed Bag Detection

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

- D.1.16 Record Keeping Requirements

D.1.17 Reporting Requirements

E.1. EMISSIONS UNIT OPERATION CONDITIONS 35

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

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

E.2 NSPS Subpart I Requirements - Standards of Performance for Hot Mix Asphalt Facilities
[40 CFR Part 60, Subpart I] [326 IAC 12-1]

Certification Form 36

Emergency Occurrence Form 37

Quarterly Report Forms 38

Quarterly Deviation and Compliance Monitoring Report Form 44

Attachment A: Fugitive Dust Plan

Attachment B: NSPS Subpart I - Standards of Performance for Hot Mix Asphalt Facilities

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 portable drum hot mix asphalt plant.

Current Source Address:	21201 Wicker Avenue, Lowell, Indiana 46356
Mailing Address:	24358 South State Road 23, South Bend, Indiana 46614
General Source Phone Number:	574-288-4811
SIC Code:	2951
County Location:	Lake
Source Location Status:	Nonattainment for 8-hour ozone standard Nonattainment for PM2.5 standard Attainment for all other criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD, Emission Offset Rules and Nonattainment NSR 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 portable source consists of the following emission units and pollution control devices:

- (a) One (1) drum dryer/mixer, processing slag in the aggregate mix, with a maximum rated throughput capacity of 400 tons per hour, equipped with one (1) 120 million British thermal units per hour (MMBtu/hr) used or waste oil fuel fired burner, using natural gas and No. 2 distillate fuel oil as backup fuels, using a jetpulse baghouse as control and exhausting to stack S1.

Under NSPS Subpart I, this is considered an affected hot-mix asphalt facility.

- (b) Cold-mix (stockpile mix) asphalt storage piles.
- (c) Two (2) 30,000 gallon liquid asphalt storage tank, installed in 2004.
- (d) One (1) 21,800 gallon used or waste oil storage tank, installed in 2004.
- (e) One (1) 12,500 gallon No. 2 fuel oil storage tank, approved for installation in 2009.
- (f) One (1) aggregate cold feed system consisting of:
- (1) Two (2) aggregate conveyors;
 - (2) One (1) 5' X 12' aggregate screen;
 - (3) Two (2) recycled asphalt conveyors; and
 - (4) Five (5) cold feed bins.

- (g) Three (3) HMA silos, each with a capacity of 200 tons, constructed in 2007.
- (h) One (1) dust silo.
- (i) One (1) Reclaimed Asphalt Pavement (RAP) feed system consisting of:
 - (1) One (1) RAP feeder bin;
 - (2) One (1) RAP screen; and
 - (3) One (1) RAP conveyor.

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

This portable source also includes the following insignificant activities:

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
 - (1) one (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of 1.2 MMBtu/hr, using No. 2 distillate fuel oil as backup fuel, and exhausting to stack S2.
 - (2) one (1) natural gas fired inert gas generator, with a maximum rated heat input capacity of 0.0228 MMBtu/hr.
- (b) Combustion source flame safety purging on startup.
- (c) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

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

This portable 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, F089-27021-05255, 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. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). 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) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, 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 the certification 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)][326 IAC 2-8-5(a)(1)]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) 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.
- (b) 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 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 or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) 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, and Northwest 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 Section), or

Telephone Number: 317-233-0178 (ask for Compliance Section)

Facsimile Number: 317-233-6865

Northwest Regional Office phone: (219) 757-0265; fax: (219)757-0267

- (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 the certification 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.

- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report. Any emergencies that have been previously reported pursuant to paragraph (b)(5) of this condition and certified by an "authorized individual" need only referenced by the date of the original report.

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

- (a) All terms and conditions of permits established prior to F089-27021-05255 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 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported 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

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. 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.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 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 the certification 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.17 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 the certification 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 in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 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 shall be certified 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.19 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) through (d) 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) through (d). 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)(2), (c)(1), and (d).

- (b) Emission Trades [326 IAC 2-8-15(c)]
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(c).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(d)]
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.20 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.21 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.22 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

The application which shall be submitted by the Permittee does require the certification 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.23 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 within 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.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
- (2) The potential to emit volatile organic compounds (VOCs) from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period. This limitation shall also satisfy the requirements of 326 IAC 2-3 (Emission Offset).
- (3) 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
- (4) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

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

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

C.3 Opacity [326 IAC 5-1]

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

- (1) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, while in Lake County.
- (2) 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, when the source is located in any County except Lake or the areas specified in (3)(a) through (g).
- (3) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in any areas listed in 326 IAC 5-1-1(c), unless otherwise stated in this permit .
- (4) 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, when the source is located in any County.

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 or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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

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

C.7 Fugitive Dust Emissions [326 IAC 6.8-10-3]

Pursuant to 326 IAC 6.8-10-3 (formerly 326 IAC 6-1-11.1) (Lake County Fugitive Particulate Matter Control Requirements), the particulate matter emissions from source wide activities shall meet the following requirements:

- (a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).
- (b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).
- (c) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).
- (d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.
- (e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.
- (f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.

- (g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).
- (h) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.
- (i) The PM₁₀ emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
- (j) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).
- (k) The PM₁₀ emissions from each material processing stack shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
- (l) Fugitive particulate matter from the material processing facilities shall not exceed ten percent (10%) opacity.
- (m) Slag and kish handling activities at integrated iron and steel plants shall comply with the following particulate emissions limits:
 - (A) The opacity of fugitive particulate emissions from transfer from pots and trucks into pits shall not exceed twenty percent (20%) on a six (6) minute average.
 - (B) The opacity of fugitive particulate emissions from transfer from pits into front end loaders and from transfer from front end loaders into trucks shall comply with the fugitive particulate emission limits in 326 IAC 6.8-10-3(9).

Material processing facilities include crushers, screens, grinders, mixers, dryers, belt conveyors, bucket elevators, bagging operations, storage bins, and truck or railroad car loading stations.

- (n) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the attached Fugitive Dust Control Plan.

C.8 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.9 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 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.10 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A 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 certification 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 certification 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.11 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.12 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance or ninety (90) days of initial start-up, whichever is later. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, 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 the certification 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.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.14 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

C.15 Continuous Compliance Plan [326 IAC 6.8-8-1] [326 IAC 6.8-8-8]

- (a) Pursuant to 326 IAC 326 IAC 6.8-8-1, the Permittee shall submit to IDEM and maintain at source a copy of the Continuous Compliance Plan (CCP). The Permittee shall perform the inspections, monitoring and record keeping in accordance with the information in 326 IAC 6.8-8-5 through 326 IAC 6.8-8-7 or applicable procedures in the CCP.
- (b) Pursuant to 326 IAC 6.8-8-8, the Permittee shall update the CCP, as needed, retain a copy of any changes and updates to the CCP at the source and make the updated CCP available for inspection by the department. The Permittee shall submit the updated CCP, if required to IDEM, OAQ within thirty (30) days of the update.
- (c) Pursuant to 326 IAC 6.8-8, failure to submit a CCP, maintain all information required by the CCP at the source, or submit update to a CCP is a violation of 326 IAC 6.8-8.

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

C.16 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.17 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.18 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

- (a) Upon detecting an excursion or exceedance, the Permittee shall 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 emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned 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 within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (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 maintain the following records:
 - (1) monitoring data;
 - (2) monitor performance data, if applicable; and
 - (3) corrective actions taken.

C.19 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 take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) 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 the certification 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.20 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. 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, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance or ninety (90) days of initial startup, whichever is later.

C.21 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. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of 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
- (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) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) 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.

Portable Source Requirement

C.22 Relocation of Portable Sources [326 IAC 2-14-4]

- (a) This permit is approved for operation in all areas in Indiana. This determination is based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2, 326 IAC 2-1.1-5 and Emission Offset requirements in 326 IAC 2-3.
- (b) A request to relocate shall be submitted to IDEM, OAQ at least thirty (30) days prior to the intended date of relocation. This submittal shall include the following:
 - (1) A list of governmental officials entitled to receive notice of application to relocate. IC 13-15-3-1
 - (2) A list of adjacent landowners that the Permittee will send written notice to not more than ten (10) days after submission of the request to relocate. IC 13-15-8
 - (3) The new location address of the portable source.
 - (4) Whether or not this portable source will be relocated to another source.
 - (5) If relocating to another source:
 - (A) Name, location address, and permit number of the source this portable source is relocating to.
 - (B) Whether or not the sources will be considered as one source. See Non Rule Policy (NRP) Air-005 and Air-006.
 - (6) If the sources will be considered as one source, whether or not the source to be relocated to has received the necessary approvals from IDEM to allow the relocation.
- (c) A "Relocation Site Approval" letter shall be obtained prior to relocating.
- (d) A valid operation permit consists of this document and any subsequent "Relocation Site Approval" letter specifying the current location of the portable plant.

The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Stratospheric Ozone Protection

C.23 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 the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) drum dryer/mixer, processing slag in the aggregate mix, with a maximum rated throughput capacity of 400 tons per hour, equipped with one (1) 120 million British thermal units per hour (MMBtu/hr) re-refined waste fuel fired burner, using natural gas and No. 2 distillate fuel oil as backup fuels, using a jetpulse baghouse as control and exhausting to stack S1.

Under NSPS Subpart I, this is considered an affected hot-mix asphalt facility.

- (b) Cold-mix (stockpile mix) asphalt storage piles.

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

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

D.1.1 When Located in Lake County Particulate Matter (PM) [326 IAC 6.8-1-2]

Pursuant to 326 IAC 6.8-1-2(a) (Particulate Matter Limitations for Lake County), particulate matter (PM) emissions from the drum-mix dryer shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf) of exhaust air.

D.1.2 When Located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties Particulate Matter (PM) [326 IAC 6.5-1-2]

Pursuant to 326 IAC 6.5-1-2 (Particulate Matter Limitations Except Lake County), particulate matter (PM) emissions from the dryer/mixer shall not exceed 0.03 grain per dry standard cubic foot of exhaust air.

D.1.3 Particulate Matter (PM) [326 IAC 2-2]

- (a) In order to render 326 IAC 2-2 not applicable, the amount of asphalt processed shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM emissions from the dryer/mixer shall not exceed 0.879 pounds of PM per ton of asphalt processed.

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

D.1.4 Dryer and Mixer FESOP Limits [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-3][326 IAC 2-1.1-5]

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

- (a) The amount of asphalt processed shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM₁₀ emissions from the dryer/mixer shall not exceed 0.360 pounds per ton of asphalt processed.
- (c) The PM_{2.5} emissions from the dryer/mixer shall not exceed 0.378 pounds per ton of asphalt produced

- (d) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.
- (e) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

Compliance with these limitations, combined with the limited potential to emit from other emission units at this source, shall limit the source-wide total potential to emit PM10, PM2.5, CO and NOx to less than 100 tons per 12 consecutive month period. VOC emissions are limited to less than 25 tons per year (since this source is approved to relocate in Lake County) and shall render 326 IAC 2-7 (Part 70), 326 IAC 2-3, (Emission Offset), 326 IAC 8-1-6, 326 IAC 2.1.1-5 (Nonattainment New Source Review), and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.5 Fuel Limitations [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following fuel limitations combusted in the dryer/mixer burner and all other combustion equipment:

- (a) Sulfur Content and used or waste oil Specifications
 - (1) The sulfur content of the slag shall not exceed 1.5 percent by weight.
 - (2) SO₂ emissions from the slag used in the dryer/mixer shall not exceed 0.74 pounds of SO₂ per ton of slag processed.
 - (3) The sulfur content of No.2 fuel oil shall not exceed 0.50 percent by weight.
 - (4) The sulfur content of the used or waste oil shall not exceed 0.66 percent by weight.
 - (5) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of used or waste oil burned.
 - (6) The used or waste oil combusted shall not contain more than 0.50% ash, 0.200% chlorine, and 0.01% Lead.
- (b) Pursuant to 326 IAC 2-8-4, the SO₂ emissions from the aggregate mixer/dryer burner shall be limited as follows:
 - (1) The usage of slag shall not exceed 140,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (2) The usage of used or waste oil and used or waste oil equivalents for the aggregate dryer burner shall not exceed 900,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. This is equivalent to 99.0 tons/year of SO₂ emissions.

For the purpose of determining compliance with this limit:

- (A) Every 1.24 gallon of No. 2 fuel oil shall be equivalent to 1 gallon of used or waste oil based on SO₂ emissions. However, the used or waste oil and used or waste oil equivalent usage shall in no case exceed 900,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (B) Every 161.7 MMCF of natural gas shall be equivalent to 1,000 gallons of used or waste oil based on SO₂ emissions. However, the used or waste oil and used or waste oil equivalent usage shall in no case exceed 900,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (c) Pursuant to 326 IAC 2-8-4, the NO_x emissions from the aggregate mixer/dryer burner shall be limited as follows:
 - (1) The usage of natural gas and natural gas equivalents for the aggregate dryer burner shall not exceed 1,034.20 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month. This is equivalent to 98.25 tons per year of NO_x emissions.

For the purpose of determining compliance with this limit:

- (A) Every 1,000 gallons of No. 2 fuel oil shall be equivalent to 0.126 MMCF of natural gas based on NO_x emissions. However, the natural gas and natural gas equivalent usage shall in no case exceed 1,034.20 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (B) Every 1,000 gallons of used or waste oil shall be equivalent to 0.100 million cubic feet of natural gas based on NO_x emissions. However, the natural gas and natural gas equivalent usage shall in no case exceed 1,034.20 MMCF per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the emissions from all other units at this source, shall limit the source-wide total potential to emit NO_x and SO₂ to less than 100 tons per 12 consecutive month period, each, HCL to less than 10 tons per 12 consecutive month period, and any combination of HAPs to less than 25 tons per 12 consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

D.1.6 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1][326 IAC 7-2-1]

- (a) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the dryer/mixer burner shall not exceed five-tenths (0.5) pounds per million Btu heat input when using distillate oil
- (b) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the dryer/mixer burner shall not exceed one and six-tenths (1.6) pounds per million Btu heat when using used or waste oil.
- (c) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.7 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-3]

- (a) Pursuant to 326 IAC 2-8-4, the VOC solvent used as diluent in the liquid binder used in cold mix asphalt production from the plant shall not exceed 10.8 tons of VOC emissions are emitted per twelve (12) consecutive month period, with compliance determined at the end of each month. This shall be achieved by limiting the total VOC solvent of any one selected binder as follows.

When more than one binder is used, the formula in (6) must be applied so that the total VOC emitted is less than 10.8 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

Cutback asphalt rapid cure liquid binder usage shall not exceed 11.3 tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

Cutback asphalt medium cure liquid binder usage shall not exceed 15.4 tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

Cutback asphalt slow cure liquid binder usage shall not exceed 43 tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

Emulsified asphalt with solvent liquid binder usage shall not exceed 23.2 tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

Other asphalt with solvent liquid binder shall not exceed 430.4 tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

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

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

Compliance with these limits, combined with the VOC emissions from other units at this source, will limit source-wide VOC emissions to less than 25 tons per year and render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD), 326 IAC 2-3 (Emission Offset) not applicable.

D.1.8 Volatile Organic Compounds (VOCs) [326 IAC 8-5-2]]

Pursuant to 326 IAC 8-5-2 (Miscellaneous Operations: asphalt paving), the owner or operator shall not cause or allow the use of asphalt emulsion containing more than seven (7.0) percent oil distillate by volume of emulsion for any paving application except the following purposes:

- (a) penetrating prime coating
- (b) stockpile storage
- (c) application during the months of November, December, January, February and March

D.1.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the dryer/burner and drum mixer units and their control device.

Compliance Determination Requirements

D.1.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.1, D.1.2, D.1.3 and D.1.4, the Permittee shall perform PM, PM 2.5 and PM10 testing for dryer/mixer (Baghouse CD-1) within 180 days of publication of the new or revised condensable PM test method(s) referenced in the U. S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM2.5), signed on May 8th, 2008, or five years from the most recent valid compliance test, whichever is later. This testing shall be conducted utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 and PM2.5 includes filterable and condensable PM.

D.1.11 Particulate Control

- (a) In order to comply with Conditions D.1.1, D.1.2, D.1.3 and D.1.4, the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.

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

D.1.12 Sulfur Dioxide (SO₂) Emissions and Sulfur Content

Compliance with the sulfur dioxide emissions and sulfur content limitations in Conditions D.1.4(a), and D.1.5 shall be determined utilizing one of the following options:

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate compliance with sulfur dioxide emissions and sulfur content limitations by:
 - (1) Providing vendor analysis of heat content and sulfur content of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer/mixer, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

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

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

D.1.13 Visible Emission Notations

- (a) Visible emission notations of the dryer/ mixer baghouse stack exhaust and conveyor transfer points shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

- (e) If abnormal emissions are observed, the Permittee shall take reasonable steps in accordance with Section C-Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C- Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.14 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer at least once per day when the process is in operation. When or any one reading, the pressure drop across the baghouse is outside the normal range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - - Response to Excursions or Exceedances, 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 at least once every six (6) months.

D.1.15 Broken or Failed Bag Detection

In the event that bag failure has been observed:

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

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

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

D.1.16 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.3 and D.1.4 the Permittee shall keep records of the amount of asphalt processed through the dryer/mixer. Records necessary to demonstrate compliance shall be available within thirty (30) days of the end of each compliance period.
- (b) To document compliance with Condition D.1.5, the Permittee shall maintain records in accordance with (1) through (9) below.
 - (1) Calendar dates covered in the compliance determination period;

- (2) Actual slag usage, sulfur content and equivalent sulfur dioxide emission rates for all slag used at the source per month;
- (3) A certification, signed by the owner or operator, that the records of the slag supplier certifications represent all of the slag used during the period; and
- (4) If the slag supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (i) Slag supplier certifications;
 - (ii) The name of the slag supplier; and
 - (iii) A statement from the slag supplier that certifies the sulfur content of the slag.
- (5) Actual used or waste oil and used or waste oil equivalent usage in the 120 MMBtu per hour burner and other combustion equipment for the aggregate dryer per month since last compliance determination period and equivalent SO₂ emissions;
- (6) Actual natural gas and natural gas equivalent usage in the 120 MMBtu per hour burner and other combustion equipment for the aggregate dryer per month since last compliance determination period and equivalent NOx emissions;
- (7) Actual No. 2 fuel oil and No. 2 fuel oil equivalent usage in the 120 MMBtu per hour burner and other combustion equipment for the aggregate dryer per month since last compliance determination period and equivalent NOx emissions;
- (8) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
- (9) If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (i) Fuel supplier certifications.
 - (ii) The name of the fuel supplier; and
 - (iii) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.

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

- (c) The Permittee shall maintain records sufficient to verify compliance with the procedures specified in Condition D.1.5. Records shall be maintained for a period of five (5) years and shall be made available upon request by IDEM.

- (d) To document compliance with Condition D.1.7 the Permittee shall maintain records in accordance with (a) through (d) below. Records maintained for (a) through (d) below shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limit established in Condition D.1.4(e).
- (a) Compliance dates covered in the compliance determination period;
 - (b) Cutback asphalt slow cure liquid binder usage in the production of cold mix asphalt each month;
 - (c) VOC solvent by weight of the cutback asphalt slow cure liquid binder used in the production of cold mix asphalt each month;
 - (d) Amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted each month.

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

- (e) To document compliance with Condition D.1.13, the Permittee shall maintain records of visible emission notations of the dryer/mixer baghouse stack once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (f) To document compliance with Condition D.1.14, the Permittee shall maintain records once per day of the pressure drop during normal operation. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
- (g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.17 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.3, D.1.4, and D.1.5 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Hot-Mix Asphalt Plant

- (a) One (1) hot asphalt drum mixer capable of processing 400 tons per hour of raw material, equipped with one (1) 120 million British thermal units (MMBtu) per hour used or waste fuel fired burner, using natural gas and No. 2 distillate fuel oil as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, exhausting at one (1) stack, identified as S1;

Under NSPS subpart I, this is considered an affected hot-mix asphalt facility.

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

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

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

- (b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.2 New Source Performance Standards (NSPS) for (Hot Mix Asphalt Facilities) [40 CFR Part 60, Subpart I] [326 IAC 12]

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Walsh & Kelly, Inc.
Initial Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
Mailing Address: 24358 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F089-27021-05255

**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: Walsh & Kelly, Inc.
Initial Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
Mailing Address: 24358 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F089-27021-05255

This form consists of 2 pages

Page 1 of 2

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

A certification is not required for this report.

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

FESOP Quarterly Report

Source Name: Walsh and Kelly, Inc.
 Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
 Mailing Address: 24358 Road 23, South Bend, Indiana 46614
 FESOP No.: F089-27021-05255
 Facility: 120 MMBtu per hour aggregate dryer burner
 Parameter: Used or waste oil usage limit to limit SO₂ emissions
 Limit: the usage of used or waste oil with a sulfur content of 0.66% and used or waste oil equivalents in the 120 MMBtu per hour burner for the aggregate dryer shall be limited to 900,000 U.S. gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Used or waste oil and equivalent usage this month (gallons)	Used or waste oil and equivalent usage previous 11 months (gallons)	12 month total used or waste oil and equivalent usage (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: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY COMPLIANCE DATA SECTION

FESOP Quarterly Report

Source Name: Walsh and Kelly, Inc.
 Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
 Mailing Address: 24358 Road 23, South Bend, Indiana 46614
 FESOP No.: F089-27021-05255
 Facility: Dryer/Burner
 Parameter: Hot Mix Asphalt Production
 Limit: The amount of hot mix asphalt produced in the dryer/burner shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR: _____

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

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

Submitted by: _____
 Title / Position: _____
 Signature: _____
 Date: _____
 Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Source Name: Walsh and Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
Mailing Address: 24358 Road 23, South Bend, Indiana 46614
FESOP No.: F089-27021-05255
Facility: Entire Asphalt Plant
Parameter: Slag Usage
Limit: This source shall use slag containing aggregate mixes with less than or equal to 1.5% sulfur by weight, and shall not exceed more than 140,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month (tons)	Previous 11 Months (tons)	12 Month Total (tons)
Month 1			
Month 2			
Month 3			

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

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Walsh and Kelly, Inc.
 Initial Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
 Mailing Address: 24358 State Road 23, South Bend, Indiana 46614
 FESOP No.: F089-27021-05255
 Facility: 120 MMBtu per hour aggregate dryer burner
 Parameter: Natural gas usage limit to limit NOx emissions
 Limit: the usage of natural gas with and natural gas equivalents in the 120 MMBtu per hour burner for the aggregate dryer shall be limited to 1,034.2 million (MM) cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month. For purposes of determining compliance with this limit, the fuel equivalency ratios in Condition D.1.5 shall be used.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Natural gas and equivalent usage this month (MMcf)	Natural gas and equivalent usage previous 11 months (MMcf)	12 month total Natural gas and equivalent usage (MMcf)
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: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Walsh and Kelly, Inc.
Initial Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
Mailing Address: 24358 State Road 23, South Bend, Indiana 46614
FESOP No.: F089-27021-05255
Facility: Cold mix asphalt storage
Parameter: VOC
Limit: The VOC solvent used as diluent in the liquid binder used in cold mix asphalt production from the plant shall not exceed 10.8 tons of VOC emissions are emitted per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Total VOC solvent usage this month (gallons)	Total VOC solvent usage previous 11 months (gallons)	12 month total VOC solvent usage (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: _____

Attach a signed certification to complete this report.

**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: Walsh & Kelly, Inc.
Initial Source Address: 21201 Wicker Avenue, Lowell, Indiana 46356
Mailing Address: 24358 State Road 23, South Bend, Indiana 46614
FESOP Permit No.: F089-27021-05255

Months: _____ to _____ Year: _____

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
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: _____

Attach a signed certification to complete this report.

Attachment A

Walsh and Kelly, Inc.

ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN

- (a) Aggregate storage piles will be watered when dust can be observed blowing from the piles. Water will be applied at a rate of 275 gallons of water per acre of storage piles or greater if needed to suppress dust.
- (b) The plant roadways will be watered when dust can be observed coming up from the road upon vehicular passage. Water will be applied at a rate of 3 gallons of water per mile of roadway, or greater if needed to suppress dust.
- (c) Asphalt pavement will be applied as it becomes available.

Attachment B

**Walsh and Kelly, Inc.
Portable**

Permit No. F089-27021-05255

Subpart I—Standards of Performance for Hot Mix Asphalt Facilities

§ 60.90 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977, as amended at 51 FR 12325, Apr. 10, 1986]

§ 60.91 Definitions.

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

(a) *Hot mix asphalt facility* means any facility, as described in §60.90, used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements.

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

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

- (1) Contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf).
- (2) Exhibit 20 percent opacity, or greater.

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

§ 60.93 Test methods and procedures.

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

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.92 as follows:

- (1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).
- (2) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989]

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

**Technical Support Document (TSD) for a Federally Enforceable State Operating
Permit Renewal**

Source Background and Description

Source Name:	Walsh & Kelly, Inc.
Current Source Location:	21201 Wicker Avenue, Lowell, Indiana 46356
Initial Source Location:	24358 South State Road 39, Hanna, Indiana 46340
County:	Lake
SIC Code:	2951
Permit Renewal No.:	089-27021-05255
Permit Reviewer:	Janet Mobley

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Walsh & Kelly, Inc. relating to the operation of a portable drum hot mix asphalt plant.

History

On September 25, 2008, Walsh & Kelly, Inc. submitted an application to the OAQ requesting to renew its operating permit. Walsh & Kelly, Inc. was issued a FESOP on June 28, 2004. The initial location was in LaPorte County, it is now located in Lake County. Recycled fuel is the main fuel at the source, but prefer to stay permitted to burn natural gas and no. 2 fuel also.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following emission units:

- (a) One (1) hot asphalt drum mixer, processing slag in the aggregate mix, capable of processing 400 tons per hour of raw material, equipped with one (1) 120 million British thermal units (MMBtu) per hour used or waste oil fuel fired burner, using natural gas and No. 2 distillate fuel oil as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, exhausting to stack S1;

Under NSPS subpart I, this is considered an affected hot-mix asphalt facility.

- (b) Cold-mix (stockpile mix) asphalt storage piles.
- (c) Two (2) 30,000 gallon liquid asphalt storage tank, installed in 2004.
- (d) One (1) 21,800 gallon used or waste oil storage tank, installed in 2004.
- (e) One (1) 12,500 gallon No. 2 fuel oil storage tank, approved for installation in 2009.
- (f) One (1) aggregate cold feed system consisting of:
 - (1) Two (2) aggregate conveyors;
 - (2) One (1) 5' X 12' aggregate screen;
 - (3) Two (2) recycled asphalt conveyors; and

- (4) Five (5) cold feed bins.
- (f) Three (3) HMA silos, each with a capacity of 200 tons, constructed in 2007.
- (g) One (1) dust silo.
- (h) One (1) Reclaimed Asphalt Pavement (RAP) feed system consisting of:
 - (1) One (1) RAP feeder bin;
 - (2) One (1) RAP screen; and
 - (3) One (1) RAP conveyor.

Insignificant Activities

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
 - (1) one (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of 1.2 MMBtu/hr, using No. 2 distillate fuel oil as backup fuel, and exhausting at stack (S2).
 - (2) one (1) natural gas fired inert gas generator, with a maximum rated heat input capacity of 0.0228 MMBtu/hr.
- (b) Combustion source flame safety purging on startup.
- (c) Paved and unpaved roads and parking lots with public access.

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit

The source has added one 30,000 gallon liquid asphalt storage tank and a HMA silo to the 2 existing unpermitted HMA silos.

Emission Units and Pollution Control Equipment Removed From the Source

One permitted 20,500 gallon no. 2 fuel oil storage tank was never installed is being removed from the permit renewal, and a 12,500 gallon No. 2 fuel oil storage tank is being installed instead.

Existing Approvals

Since the issuance of the FESOP (091-18887-05255) on June 28, 2004, the source has constructed or has been operating under the following approvals as well:

- (a) Administrative Amendment No. (091-24267-05255) issued on February 14, 2007; and
- (b) Portable Source Relocation No. (091-24046-05255) issued on February 14, 2007.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

IDEM is aware that equipment has been constructed and prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled "Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit".

IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is currently located in Lake County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of East Chicago bounded by Columbus Drive on the north; the Indiana Harbor Canal on the west; 148 th Street, if extended, on the south; and Euclid Avenue on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of East Chicago and Lake County.
O ₃	Nonattainment Subpart 2 Moderate effective June 15, 2004, for the 8-hour ozone standard. ¹
PM ₁₀	Attainment effective March 11, 2003, for the cities of East Chicago, Hammond, Whiting, and Gary. Unclassifiable effective November 15, 1990, for the remainder of Lake County.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.

¹Nonattainment Severe 17 effective November 15, 1990, for the Chicago-Gary-Lake County area for the 1-hour ozone standard which was revoked effective June 15, 2005.

Basic nonattainment designation effective federally April 5, 2005, for PM2.5.

(a) Ozone Standards

- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (2) On September 6, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Allen, Clark, Elkhart, Floyd, LaPorte, and St. Joseph as attainment for the 8-hour ozone standard.
- (3) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
- (4) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone.
 - (i) 1-hour ozone standard

On December 22, 2006 the United States Court of Appeals, District of Columbia issued a decision which served to partially vacate and remand the U.S. EPA's final rule for implementation of the eight-hour National Ambient Air quality Standard for ozone. *South Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882 (D.C. Cir., December 22, 2006), *rehearing denied* 2007 U.S. App. LEXIS 13748 (D.C. Cir., June 8, 2007). The U.S. EPA has instructed IDEM to issue permits in accordance with its interpretation of the *South Coast* decision as follows: Gary-Lake-Porter County was previously designated as a severe non-attainment area prior to revocation of the one-hour ozone standard, therefore, pursuant to the anti-backsliding provisions of the Clean Air Act, any new or existing source must be subject to the major source applicability cut-offs and offset ratios under the area's previous one-hour standard designation. This means that a source must achieve the Lowest Achievable Emission Rate (LAER) if it exceeds 25 tons per year of VOC emissions and must offset any increase in VOC emissions by a decrease of 1.3 times that amount.

On January 26, 1996 in 40 CFR 52.777(i), the U.S. EPA granted a waiver of the requirements of Section 182(f) of the CAA for Lake and Porter Counties, including the lower NOx threshold for nonattainment new source review. Therefore, VOC emissions alone are considered when evaluating the rule applicability relating to the 1-hour ozone standards. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability for the source section.

(ii) 8-hour ozone standard

VOC and NOx emissions are considered when evaluating the rule applicability relating to the 8-hour ozone standard. Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability – Entire Source section.

(b) PM2.5

U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Lake County as nonattainment for PM2.5. On March 7, 2005, the Indiana Attorney General's Office, on behalf of IDEM, filed a law suit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's New Source Review Rule for PM2.5 promulgated on May 8th, 2008, and effective on July 15th 2008. Therefore, direct PM2.5 and SO2 emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

Lake County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(d) Fugitive Emissions

This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions are counted toward the determination of PSD and Emission Offset applicability.

Portable Source

- (a) Initial Location
This is a portable source and its initial location in 2004 was 14532 South State Road 39, Hanna, Indiana 46340.
- (b) The current location is 21201 Wicker Avenue, Lowell, Indiana 46356
- (c) PSD and Emission Offset Requirements
The emissions from this portable source were reviewed under the requirements of the Prevention of Significant Deterioration (PSD) 326 IAC 2-2 and Emission Offset 326 IAC 2-3.

Unrestricted Potential Emissions

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM₁₀, PM_{2.5}, SO₂, NO_x, VOC and CO are still equal to or greater than 100 tons per year. The source is subject to the provisions of 326 IAC 2-7. However, the source has agreed to limit their PM₁₀, PM_{2.5}, SO₂, NO_x, VOC and CO emissions to less than Title V levels, therefore the source will be issued a FESOP renewal.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all other criteria pollutants are less than 100 tons per year.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is greater than twenty-five (25) tons per year.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This existing source is not in 1 of 28 source categories defined in 326 IAC 2-2-1(y)(1). The potential to emit PM, PM₁₀, PM_{2.5} and SO₂ from this source, before controls, of each pollutant is greater than two hundred fifty (250) tons/yr. In order to continue to make the requirements of 326 IAC 2-2 (PSD) not applicable, the source has proposed the following limits:

Actual Emissions

No previous emission data has been received from the source.

Potential to Emit After Issuance

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

To remain in Lake County and to meet a FESOP limit of less than twenty-five (25) tons/yr for VOC emissions, the source is limited.

Potential to Emit of the Entire Source After Issuance of the FESOP (tons/year) Limited/Controlled Potential Emissions										
Process Description	Criteria Pollutants							Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP	
Ducted Emissions										
Fuel Combustion (worst case)	14.40	11.48	11.48	44.53	98.25	2.84	43.44	7.38	5.94	(hydrogen chloride)
Dryer/Mixer	219.87	89.90	94.62	14.50	13.75	8.00	32.5	2.66	0.78	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	51.80	0	0	0	0	0	
Hot Oil Heater Fuel Combustion (worst Case)	0.08	0.12	0.12	2.67	0.75	0.01	0.19	0.00	0.002	
Generator	0.0002	0.0008	0.001	0.003	0.010	0.001	0.008	0.0002	0.00018	
Worst Case Emissions	219.95	90.02	94.74	99.00	99.01	8.01	43.63	7.28	5.94	(hydrogen chloride)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	0.28	0.28	0.28	0	0	4.28	0.72	0.07	0.02	(formaldehyde)
Material Storage Piles	0.67	0.23	0.23	0	0	0	0	0	0	
Material Processing and Handling	1.62	0.76	0.12	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	7.93	2.9	2.90	0	0	0	0	0	0	
Paved and Unpaved Roads (worst case)	17.77	4.53	0.45	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	10.76	0	2.81	0.97	(xylenes)
Gasoline Dispensing	0	0	0	0	0	0	0	0	0	(xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl.	0	negl.	negl.	
Total Fugitive Emissions	28.27	8.7	3.98	0	0	15.04	0.72	2.97	0.97	(xylenes)
Insignificant Activities	0.08	0.04	0.04	2.69	0.77	0.03	0.45	--		
Totals Limited/Controlled Emissions	249	99	99	99	99.01	23.05	44.35	10.25	5.94	(hydrogen chloride)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10	
Emission Offset/PSD Major NSR NA Source Thresholds	250	250	100	250	250	25***	250	NA	NA	
(1) PTE after Production Limitation. 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". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. ** Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible. *** This source is limited to less than 25 tons per year for VOC since it is allowed to relocate in Lake County.										

- (a) This existing portable source is not major for Nonattainment NSR because the emissions of the nonattainment pollutants, are less than one hundred (<100) tons per year.
- (b) Fugitive Emissions
 This existing portable source is not major for Emission Offset because the emissions of VOC are limited to less than twenty-five (25) tons per year.

Federal Rule Applicability

The following federal rules are applicable to the source.

New Source Performance Standards (NSPS)

- (a) This portable drum hot-mix asphalt plant, is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.90, Subpart I) (326 IAC 12) because it meets the definition of a hot-mix asphalt facility pursuant to the rule and it was constructed after June 11, 1973. This rule limits particulate matter emissions to 0.04 grains per dry standard cubic foot (gr/dscf) and also limits visible emissions to 20% opacity.

The source will be able to comply with this rule by using the Baghouse to limit particulate matter emissions from the dryer/mixer to less than 0.04 gr/dscf.

The dryer/mixer is subject to the following portions of 40 CFR 60, Subpart I:

- (1) 40 CFR 60.90.
- (2) 40 CFR 60.91.
- (3) 40 CFR 60.92.
- (4) 40 CFR 60.93.

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

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the dryer/mixer except when otherwise specified in 40 CFR 60 Subpart I.

- (b) The one (1) 21,800 gallon used or waste oil storage tank, is not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.110, Subpart Kb) “Standards of Performance for Volatile Organic Liquid Storage Vessels”. The storage tank has a capacity greater than 75 m³ (19,813 gallons) but less than 151 m³ (39,890 gallons) and the liquid stored in the tank has a maximum true vapor pressures of less than 15.0 kPa. Therefore, pursuant to 40 CFR 60.110b(b), this tank is exempt from this rule and the requirements of this rule are not included in the permit for this tanks.
- (c) The requirements of the New Source Performance Standard for Asphalt Processing and Asphalt Roofing Manufacture, 40 CFR 60, Subpart UU (326 IAC 12), are not included in the permit, since pursuant to 40 CFR 60.471, the portable drum hot-mix asphalt plant is not an asphalt processing plant because it does not blow asphalt, or an asphalt roofing plant because it does not produce asphalt roofing products, and pursuant to 40 CFR 60.101(a) the portable drum hot-mix asphalt plant is not a petroleum refinery because it is not engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.
- (c) The requirements of the New Source Performance Standard for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO) (326 IAC 12), are not included in the permit, since the Recycled Asphalt Pavement (RAP) system does not contain a crusher or grinding mill. The source will be receiving pre-crushed/pre-sized RAP materials, therefore, pursuant to 40 CFR 60.670(a)(2) stand-alone screening operations at plants without crushers or grinding mills are exempt.
- (d) The requirements of the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR 60, Subpart UUU (326 IAC 12), are not included in the permit, since a portable drum hot-mix asphalt plant is not a mineral processing plant, meaning that it does not process or produce any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL (326 IAC 20-(number)), are not included in the permit, since the portable drum hot-mix asphalt plant is not a major source of HAPs, is not located at and is not part of a major source of HAP emissions, and does not engage in the preparation of asphalt flux or asphalt roofing materials.
- (f) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

CAM (Compliance Assurance Monitoring)

- (g) Pursuant to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) is not included in the permit because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is not a major source, under PSD (326 IAC 2-2), because the potential to emit of PM is limited to less than 250 tons per year and the potential to emit all other attainment regulated pollutants are less 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

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

- (1) Pursuant to 326 IAC 2-2, the amount of asphalt processed shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) PM emissions from the dryer/mixer shall not exceed 0.879 pounds per ton of asphalt processed.

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

326 IAC 2-3 (Emission Offset)

In order to render the requirements of 326 IAC 2-3 (Emission Offset) not applicable, the source shall comply with the following:

The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed and the amount of asphalt processed shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. This shall limit the potential VOC emissions to less than twenty-five (25) tons per year from the dryer/mixer.

The VOC solvent used as diluent in the liquid binder used in cold mix asphalt production from the plant shall not exceed 10.8 tons of VOC emissions are emitted per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the limited potential to emit from other units at this source, will limit source-wide VOC emissions to less than 25 tons per year and render 326 IAC 2-3 (Emission Offset) not applicable.

326 IAC 2-6 (Emission Reporting)

Since this source is located in Lake County and has a potential to emit NO_x greater than or equal to twenty-five (25) tons per year, an emission statement covering the previous calendar year must be submitted by July 1 of each year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)

Since this source is located in Lake County, 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 twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (2) 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, when the source is located in any County except Lake or the areas specified in (3)(a) through (g).
- (3) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in the following areas listed in 326 IAC 5-1-1(c):
 - (a) Clark County (Jefferson Township - Cities of Jeffersonville, Clarksville, Oak Park);
 - (b) Dearborn County (Lawrenceburg Township - Cities of Lawrenceburg and Greendale);
 - (c) Dubois County (Bainbridge Township - the City of Jasper);
 - (d) Marion County (except the area of Washington Township east of Fall Creek and the area of Franklin Township south of Thompson Road and east of Five Points Road);
 - (e) St. Joseph County (the area north of Kern Road and east of Pine Road);
 - (f) Vanderburgh County (the area included in the City of Evansville and Pigeon Township); and
 - (g) Vigo County (Indiana State University campus, 0.5km radius around UTM Easting 464,519.00, Northing 4,369,208.00, Zone 16).
- (4) 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, when the source is located in any County.

326 IAC 6.8-1-2 (Lake County: PM₁₀ Emission Requirements)

When located in Lake County, the source is subject to the requirements of 326 IAC 6.8-1-2 (Lake County: PM₁₀ Emission Requirements). Pursuant to the applicability requirements (326 IAC 6-3-1(c)), if any limitation established by this rule is inconsistent with applicable limitations contained in 326 IAC 6.8-1 (Lake County: PM₁₀ Emission Requirements), 326 IAC 12 (New Source Performance Standards), or 326 IAC 20 (Hazardous Air Pollutants), then the limitations contained in 326 IAC 6.8-1, 326 IAC 12, or 326 IAC 20 prevail.

For asphalt plants constructed after June 11, 1973, the rule requires that the particulate matter emissions be limited to 0.03 gr/dscf. This is equivalent to a particulate matter emission rate of 11.60 pounds per hour from the aggregate dryer. Based on 8,760 hours of operation per 12 consecutive month period, this limits PM emissions from the aggregate mixing and drying operation to 50.79 tons per year. The baghouse for the aggregate dryer shall be in operation at all times the aggregate dryer is in operation, in order to comply with this limit (see Appendix A for detailed calculations). This limit will also render the requirements of 326 IAC 2-2 (PSD) not applicable.

326 IAC 6-4 (Fugitive Dust Emissions)

This source is subject to 326 IAC 6-4 for fugitive dust emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), fugitive dust shall not be visible crossing the boundary or property line of a source. Observances of visible emissions crossing property lines may be refuted by factual data expressed in 326 IAC 6-4-2(1), (2) or (3).

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

This source is subject to 326 IAC 6-5 for fugitive particulate matter emissions if it relocates. Pursuant to 326 IAC 6-5, for any new source which has not received all the necessary pre-construction approvals before December 13, 1985, a fugitive dust control plan must be submitted, reviewed and approved. The fugitive dust control plan for this source includes the following:

- (a) Aggregate storage piles will be watered when dust can be observed blowing from the piles. Water will be applied at a rate of 275 gallons of water per acre of storage piles or greater if needed to suppress dust.
- (b) The plant roadways will be watered when dust can be observed coming up from the road upon vehicular passage. Water will be applied at a rate of 3 gallons of water per mile of roadway, or greater if needed to suppress dust.
- (c) Asphalt pavement will be applied as it becomes available.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

This source is not subject to the requirements of 326 IAC 6-5 in this renewal because the facility is located in Lake County and is subject to the requirements of 326 IAC 6.8-8 (Lake County: Continuous Compliance Plan).

326 IAC 6.8-1-2 (Lake County: PM₁₀ Emission Requirements) when located in Lake County Pursuant to 326 IAC 6.8-1-2(a), the following emission units shall not exceed 0.03 gr/dscf of particulate matter less than ten microns in diameter (PM₁₀).

Storage Piles, Truck Loading & Unloading, Transporting (Road Emissions), Conveyors, Screens and Generator.

326 IAC 6.8-8 (Lake County: Continuous Compliance Plan) When located in Lake County Pursuant to 326 IAC 6.8-8-1(18)(C), the Permittee shall submit to IDEM, and maintain at the source, a copy of the Continuous Compliance Plan. The Permittee shall perform the inspections, monitoring, and record keeping requirements as specified in 326 IAC 6.8-8-7. The Permittee shall update the CCP (as needed), retain a copy on site, and make the updated CCP available for inspection as specified in 326 IAC 6.8-8-8.

326 IAC 6.8-10 (Lake County Fugitive Particulate Matter) When located in Lake County

- (a) Pursuant to 326 IAC 6.8-10 (Lake County Fugitive Particulate Matter), the particulate matter emissions from source wide activities shall meet the following requirements:
 - (1) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).

- (2) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).
- (3) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).
- (4) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.
- (5) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.
- (6) There shall be a zero (0) percent frequency of visible emission observations of a material during the in plant transportation of material by truck or rail at any time.
- (7) The opacity of fugitive particulate emissions from the in plant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).
- (8) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.
- (9) The PM₁₀ emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
- (10) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).
- (11) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.
- (12) PM₁₀ emissions from each material processing stack shall not exceed 0.022 grains per dry standard cubic foot and ten percent (10%) opacity.
- (13) Fugitive particulate matter from the material processing facilities shall not exceed ten percent (10%) opacity.
- (14) Slag and kish handling activities at integrated iron and steel plants shall comply with the following particulate emissions limits:
 - (A) The opacity of fugitive particulate emissions from transfer from pots and trucks into pits shall not exceed twenty percent (20%) on a six (6) minute average.
 - (B) The opacity of fugitive particulate emissions from transfer from pits into front end loaders and from transfer from front end loaders into trucks shall comply with the fugitive particulate emission limits in 326 IAC 6.8-10-3(9).

Material processing facilities include crushers, screens, grinders, mixers, dryers, belt conveyors, bucket elevators, bagging operations, storage bins, and truck or railroad car loading stations.

- (b) The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the attached Fugitive Dust Control Plan.

326 IAC 2-8 (FESOP)

(a) Pursuant to 326 IAC 2-8-4, the SO₂ emissions from the aggregate mixer/dryer burner shall be limited as follows:

- (1) The usage of slag shall not exceed 140,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) The usage of used or waste oil and used or waste oil equivalents for the aggregate dryer burner shall not exceed 900,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. This is equivalent to 99.0 tons/year of SO₂ emissions.

For the purpose of determining compliance with this limit:

- (A) Every 1.24 gallon of No. 2 fuel oil shall be equivalent to 1 gallon of used or waste oil based on SO₂ emissions. However, the used or waste oil equivalent usage shall in no case exceed 900,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (B) Every 161.7 MMCF of natural gas shall be equivalent to 1,000 gallons of used or waste oil based on SO₂ emissions. However, the used or waste oil and used or waste oil equivalent usage shall in no case exceed 900,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) The sulfur content of the used or waste oil shall be limited to 0.66% by weight.
 - (3) The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight.
 - (4) HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of used or waste oil burned.
 - (5) The used or waste oil combusted shall not contain more than 0.50% ash, 0.200% chlorine, and 0.01% lead.
 - (6) The sulfur content of the slag shall not exceed 1.5 percent by weight.
 - (7) SO₂ emissions from the slag used in the dryer/mixer shall not exceed 0.74 pounds of SO₂ per ton of slag processed.

Compliance with this requirement, combined with the SO₂, HCl, and Total HAPs emissions from other units, limits the SO₂ emissions from the entire source to less than one hundred (100) tons per year, HCl to less than ten (10) tons per year and Total HAPs emissions to less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Source of Hazardous Air Pollutants HAPs) are not applicable.

(b) Pursuant to 326 IAC 2-8-4, the NO_x emissions from the aggregate mixer/dryer burner shall be limited as follows:

- (1) The usage of natural gas and natural gas equivalents for the aggregate dryer burner shall not exceed 1,034.20 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month. This is equivalent to 99.0 tons per year of NO_x emissions.

For the purpose of determining compliance with this limit:

- (A) Every 1,000 gallons of No. 2 fuel oil shall be equivalent to 0.126 MMCF of natural gas based on NOx emissions. However, the natural gas and natural gas equivalent usage shall in no case exceed 1,034.20 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (B) Every 1,000 gallons of used or waste oil shall be equivalent to 0.100 million cubic feet of natural gas based on NOx emissions. However, the natural gas and natural gas equivalent usage shall in no case exceed 1,034.20 MMCF per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the NOx emissions from other units at the source, will limit source-wide NOx emissions to less than 100 tons per year. Compliance with these limits will render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD), and 326 IAC 2-3 (Emission Offset) not applicable.

- (a) The amount of asphalt processed shall not exceed 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM10 emissions from the dryer/mixer shall not exceed 0.360 pounds per ton of asphalt processed.
- (c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.378 pounds per ton of asphalt produced
- (d) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.

Compliance with these limitations, combined with the limited potential to emit from other emission units at this source, shall limit the source-wide total potential to emit PM10, PM2.5, CO, SO2 and NOx to less than 100 tons per 12 consecutive month period. VOC emissions are limited to less than 25 tons per year (since this source is approved to relocate in Lake County) and shall render 326 IAC 2-7 (Part 70), 326 IAC 2-3, (Emission Offset), 326 IAC 8-1-6, 326 IAC 2.1.1-5 (Nonattainment New Source Review), and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

State Rule Applicability – Individual Facilities

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

The aggregate mixing and drying operation is not subject to the requirements of 326 IAC 6-3-2. This rule does not apply if the limitation established in the rule is less stringent than applicable limitations in 326 IAC 6-1 or 326 IAC 12. Since the applicable PM emission limits established by 326 IAC 6-1-2 (11.60 pounds per hour) and 326 IAC 12, 40 CFR 60, Subpart I (15.46 pounds per hour), are lower than the PM limit that would be established by 326 IAC 6-3-2 (66.31 pounds per hour), see Appendix A, the more stringent limits apply and the limit pursuant to 326 IAC 6-3-2 does not apply.

326 IAC 6.8-1-2 Particulate emission limitations; fuel combustion steam generators, asphalt concrete plant, grain elevators, foundries, mineral aggregate operations; modification by commissioner
This rule applies because the source is located in Lake County. Particulate matter (PM) emissions from the drum-mix dryer shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf) of exhaust air.

326 IAC 6.5-1-2 Particulate emission limitations; fuel combustion steam generators, asphalt concrete plant, grain elevators, foundries, mineral aggregate operations; modification by commissioner
This rule does not apply to the source at the present time because it is located in Lake County, but if the source relocates to Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties the particulate matter (PM) emissions from the dryer/mixer shall not exceed 0.03 grain per dry standard cubic foot of exhaust air.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

This rule applies to all facilities with a potential to emit greater than twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. The 120 MMBtu/hr dryer burning distillate oil and used or waste oil is subject to the requirements of this rule because the potential sulfur dioxide emissions from this facility is greater than twenty-five (25) tons per year. Therefore, pursuant to this rule the sulfur dioxide emissions from the 120 MMBtu/hr dryer burning No. 2 distillate oil shall be limited to 0.5 lb/MMBtu heat input. This equates to a fuel oil sulfur content limit of 0.5%. Therefore, the sulfur content of the No. 2 fuel oil must be less than or equal to 0.5% in order to comply with this rule (See Appendix A, for detailed calculations). The source will comply with this rule by using No. 2 distillate oil with a sulfur content of 0.5% or less in the dryer.

The sulfur dioxide emissions from the 120 MMBtu/hr dryer burning used or waste oil shall be limited to 1.6 lb/MMBtu heat input. This equates to a fuel oil sulfur content limit of 1.5%. Therefore, the sulfur content of the used or waste oil must be less than or equal to 1.5% in order to comply with this rule (See Appendix A, for detailed calculations). The source will comply with this rule by using used or waste oil with a sulfur content of 0.66% or less in the dryer.

The 1.2 MMBtu/hr hot oil heater and the 0.0228 MMBtu/hr inert gas generator are not subject to the requirements of this rule because potential SO₂ emissions from each of these units is less than 25 tons per year.

326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)

This source is subject to 326 IAC 7-2-1 (Reporting Requirements) because it has a potential to emit greater than twenty-five (25) tons per year of sulfur dioxide. This rule requires the source to submit to the Office of Air Quality upon request records of sulfur content, heat content, fuel consumption, and sulfur dioxide emission rates based on a calendar-month average.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

This source is not subject to the provisions of 326 IAC 8-1-6. This rule requires all facilities constructed after January 1, 1980, which have potential VOC emission rates of greater than or equal to 25 tons per year, and which are not otherwise regulated by other provisions of 326 IAC 8, to reduce VOC emissions using Best Available Control Technology (BACT). This source is subject to 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving), therefore it is not subject to the requirements of this 326 IAC 8-1-6.

The dryer is subject to 8-1-6 but limited to less than 25 tons of VOC per year, source-wide PTE of VOC is limited to less than 25 in order to render 326 IAC 2-3 not applicable. Therefore, the requirements of 8-1-6 are not applicable to any of the facilities at this source.

326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving)

This rule applies to any paving application anywhere in the state. No person shall cause or allow the use of cutback asphalt or asphalt emulsion containing more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:

- 1) penetrating prime coating
- 2) stockpile storage

- 3) application during the months of November, December, January, February and March.

This source uses liquid asphalt binder to manufacture stockpile mix for stockpile storage. Therefore, there is no limit on the percent (%) of oil distillate in the liquid asphalt used. The source is in compliance with 326 IAC 8-5-2.

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

The storage tanks at this source are not subject to 326 IAC 8-4-3 because the tanks have storage capacities less than 39,000 gallons each.

326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark and Floyd Counties)

The source is located in Lake County but is not a stationary source and is limited to less than 25 tons per year of VOC.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

The two (2) liquid asphalt storage tanks and the one (1) waste fuel oil storage tanks are each not subject to the requirements of this rule even though they are located in Lake county because the vessels have a capacity of less than thirty-nine thousand (39,000) gallon capacity and the maximum true vapor pressure is less than 15.0 kPa.

There are no other 326 IAC 8 Rules that are applicable.

326 IAC 12 (New Source Performance Standards)

The two (2) 30,000 gallon liquid asphalt storage tanks are not subject to New Source Performance Standard, 326 IAC 12, (40 CFR 60.110b, Subpart Kb) (Standards of Performance for Volatile Organic Liquid Storage Vessels) because the vapor pressure of liquid asphalt is less than 0.5 psi.

Compliance Determination and Monitoring Requirements

- (1) The dryer/mixer has applicable compliance determination conditions as specified below:

Emission Unit	Control Device	Timeframe for Testing	Pollutant	Frequency of Testing
* Dryer/Mixer	Baghouse	See below for additional information	PM, PM _{2.5} and PM ₁₀	Once every five (5) years

- (A) The Permittee shall perform PM, PM_{2.5} and PM₁₀ testing for the dryer/mixer baghouse within one hundred and eighty (180) days of publication of the new or revised condensable PM test method(s) referenced in the U.S. EPA' s Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5}), signed on May 8th, 2008. This testing shall be conducted utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM 10 and PM 2.5 includes filterable and condensable PM.

In order to comply with the PM and PM_{2.5} and PM₁₀ limitations in the permit, the baghouse for the dryer/mixer, shall be in operation and control emissions from the drum mixer & aggregate dryer/burner at all times when the drum mixer & aggregate dryer/burner is in operation.

- (B) Opacity testing utilizing 40 CFR Part 60 Appendix A, Method 9, is required to demonstrate compliance with the opacity limitation of 40 CFR 60, Subpart I.

These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

The dryer/mixer is controlled by a baghouse, to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permit Program) not applicable. PM and PM₁₀ testing is required in order to demonstrate compliance with these limits.

The hot mix drum mixer was last tested on October 27, 2008, for PM, PM₁₀ and opacity and was in compliance.

* The capacity of the dryer is maintained at its rated maximum capacity (it is not being derated as a result of the 2008 testing).

- (b) The drum mixer and aggregate dryer/burner, baghouse stack exhaust, the conveying, screening, and material transfer points have applicable compliance monitoring conditions as specified below:

Control	Parameter	Frequency	Range	Excursions and Exceedances
Conveyors, screening, material transfer points and dryer/mixer stack (S1) exhaust	Visible Emissions	Daily	Normal-Abnormal	Response Steps
Baghouse for the dryer/mixer	Water Pressure Drop	Daily	2.0 to 8.0 inches	Response Steps

These monitoring conditions are necessary because the jet-pulse baghouse, used in conjunction with the drum mixer and aggregate dryer/burner must operate properly to ensure compliance with 40 CFR 60, Subpart I, 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permit Program) not applicable.

Recommendation

The staff recommends to the Commissioner that the FESOP Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 25, 2008. Additional information was received on September 29, November 5, 2008 and May 21, 2009.

Conclusion

The operation of this portable drum hot mix asphalt plant operation is subject to the conditions of the attached FESOP Renewal No. 089-27021-05255.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Janet Mobley at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5373 or toll free at 1-800-451-6027.
- (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.idem.in.gov.

**Appendix A.1: Emissions Calculations
Unlimited Emission Summary**

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

Asphalt Plant Maximum Capacity

Maximum Hourly Asphalt Production =	400	ton/hr									
Maximum Annual Asphalt Production =	3,504,000	ton/yr									
Maximum Annual Slag Usage =	0	ton/yr		0	% sulfur						
Maximum Dryer Fuel Input Rate =	120.0	MMBtu/hr									
Natural Gas Usage =	1,051	MMCF/yr									
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and		0.50	% sulfur						
No. 4 Fuel Oil Usage =	0	gal/yr, and		0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and		0.50	% sulfur						
Propane Usage =	0	gal/yr, and		0.20	gr/100 ft3 sulfur						
Butane Usage =	0	gal/yr, and		0.22	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	7,508,571	gal/yr, and		0.66	% sulfur	0.50	% ash	0.200	% chlorine,	0.010	% lead
Diesel Engine Oil Usage =	0	gal/yr, and									
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production									
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production									
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production									
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production									
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production									
Unlimited Slag SO2 Dryer/Mixer Emission Factor =	0.00	lb/ton of slag processed									

Unlimited/Uncontrolled Emissions

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)									
	Criteria Pollutants							Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP	
Ducted Emissions										
Dryer Fuel Combustion (worst case)	120.14	95.73	95.73	364.24	99.86	3.75	44.15	53.81	49.56	(hydrogen chloride)
Dryer/Mixer (Process)	49056.00	11388.00	2628.00	101.62	96.36	56.06	227.76	18.68	5.43	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.00	0	0	0	0	0	
Hot Oil Heater Fuel Combustion (worst case)	0.07	0.12	0.12	2.55	0.72	0.01	0.18	0.003	0.002	(hexane)
Generator	0.0002	0.0008	0.0008	0.0001	0.0100	0.0005	0.0084	0.0002	0.0002	(hexane)
Worst Case Emissions*	49056.07	11388.12	2628.12	366.80	100.59	56.07	227.95	53.81	49.56	(hydrogen chloride)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	1.94	1.94	1.94	0	0	30.01	5.05	0.50	0.16	(formaldehyde)
Material Storage Piles	0.67	0.23	0.23	0	0	0	0	0	0	
Material Processing and Handling	11.32	5.35	0.81	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	55.59	20.31	20.31	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	124.42	31.71	3.17	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	42109.32	0	10983.67	3789.84	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.00	0	0.00	0.00	(xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	0	
Total Fugitive Emissions	193.94	59.55	26.46	0	0.00	42139.33	5.05	10984.17	3789.84	(xylenes)
Totals Unlimited/Uncontrolled PTE	49250.02	11447.66	2654.58	366.80	100.59	42195.40	233.00	11037.98	3789.84	(xylenes)

negl = negligible

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

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Generator

Fuel component percentages provided by the source.

This plant does not use slag.

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

Maximum Capacity

Maximum Hourly Asphalt Production	=	400	ton/hr
Maximum Annual Asphalt Production	=	3,504,000	ton/yr
Maximum Fuel Input Rate	=	120	MMBtu/hr
Natural Gas Usage	=	1,051	MMCF/yr
No. 2 Fuel Oil Usage	=	7,508,571	gal/yr, and
No. 4 Fuel Oil Usage	=	0	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage	=	0	gal/yr, and
Propane Usage	=	0	gal/yr, and
Butane Usage	=	0	gal/yr, and
Used/Waste Oil Usage	=	7,508,571	gal/yr, and
Diesel Engine Oil Usage	=	0	gal/yr, and

	=	0.50	% sulfur
	=	0.50	% sulfur
	=	0.50	% sulfur
	=	0.20	gr/100 ft3 sulfur
	=	0.22	gr/100 ft3 sulfur
	=	0.68	% sulfur
	=	0.50	% ash
	=	0.200	% chlorine
	=	0.010	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)								Unlimited/Uncontrolled Potential to Emit (tons/yr)								Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Diesel Engine (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	Diesel Engine (tons/yr)	
PM	1.9	2.0	7.0	7.815	0.5	0.6	32.0	43.4	1.00	7.51	0.00	0.00	0.000	0.000	120.14	0.00	120.14
PM10/PM2.5	7.6	3.3	8.3	9.315	0.5	0.6	25.5	43.4	3.99	12.39	0.00	0.00	0.000	0.000	95.73	0.00	95.73
SO2	0.6	78.5	75.0	78.5	0.020	0.020	97.0	40.6	0.32	294.71	0.00	0.00	0.000	0.000	364.24	0.00	364.24
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	617.4	99.86	90.10	0.00	0.00	0.00	0.00	71.33	0.00	99.86
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	49.00	2.89	0.75	0.00	0.00	0.00	0.00	3.75	0.00	3.75
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	133.0	44.1504	18.77	0.00	0.00	0.00	0.00	18.77	0.00	44.15
Hazardous Air Pollutant																	
HCl								13.2							49.56		49.56
Antimony			5.25E-03	5.25E-03				negl			0.00E+00	0.00E+00					0.0E+00
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03				1.1E-01	1.1E-04	2.10E-03	0.00E+00	0.00E+00			4.13E-01		4.1E-01
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05				negl	6.3E-06	1.58E-03	0.00E+00	0.00E+00					1.6E-03
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04				9.3E-03	5.9E-04	1.58E-03	0.00E+00	0.00E+00			3.49E-02		3.5E-02
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04				2.0E-02	7.4E-04	1.58E-03	0.00E+00	0.00E+00			7.51E-02		7.5E-02
Cobalt	8.4E-05	6.02E-03	6.02E-03	6.02E-03				2.1E-04	4.4E-05	0.00E+00	0.00E+00	0.00E+00			7.88E-04		7.9E-04
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03				0.55	2.6E-04	4.73E-03	0.00E+00	0.00E+00			2.1E+00		2.06
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03				6.8E-02	2.0E-04	3.15E-03	0.00E+00	0.00E+00			2.55E-01		0.26
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04					1.4E-04	1.58E-03	0.00E+00	0.00E+00					1.6E-03
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02				1.1E-02	1.1E-03	1.58E-03	0.00E+00	0.00E+00			4.13E-02		0.041
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04				negl	1.3E-05	7.88E-03	0.00E+00	0.00E+00			negl		7.9E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04							0.00E+00	0.00E+00					0.0E+00
1,3-Butadiene								5.47E-03							0.00E+00		0.0E+00
Acetaldehyde								1.07E-01							0.00E+00		0.0E+00
Acrolein								1.30E-02							0.00E+00		0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				2.2E-03	1.1E-03		0.00E+00	0.00E+00			8.26E-03		1.1E-03
Bis(2-ethylhexyl)phthalate								8.0E-07							0.00E+00		8.3E-03
Dichlorobenzene	1.2E-03								6.3E-04						3.00E-06		6.3E-04
Ethylbenzene			6.36E-05	6.36E-05							0.00E+00	0.00E+00					0.0E+00
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				1.65E-01	3.9E-02	2.29E-01	0.00E+00	0.00E+00			0.00E+00		0.229
Hexane	1.8E+00								0.95								0.946
Phenol								2.4E-03							9.01E-03		9.0E-03
Toluene	3.4E-03		6.20E-03	6.20E-03				5.73E-02	1.8E-03		0.00E+00	0.00E+00			0.00E+00		1.8E-03
Total PAH Haps	negl		1.13E-03	1.13E-03				3.9E-02	negl		0.00E+00	0.00E+00			1.47E-01		1.5E-01
Polycyclic Organic Matter		3.30E-03								1.24E-02							1.2E-02
Xylene			1.09E-04	1.09E-04				3.99E-02			0.00E+00	0.00E+00			0.00E+00		0.0E+00
Total HAPs									0.99	0.27	0.00	0.00	0	0	52.61	0.00	53.81

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]
 Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lbs]
 Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2, No. 4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
- Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5
- Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Tables 3.3-1 and 3.3-2

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

Abbreviations

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

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

**Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley**

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

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

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	49056	49056	49056	49056
PM10*	6.5	6.5	6.5	11388	11388	11388	11388
PM2.5*	1.5	1.5	1.5	2628	2628	2628	2628
SO2**	0.0034	0.011	0.058	6.0	19.3	101.6	101.6
NOx**	0.026	0.055	0.055	45.6	96.4	96.4	96.4
VOC**	0.032	0.032	0.032	56.1	56.1	56.1	56.1
CO***	0.13	0.13	0.13	227.8	227.8	227.8	227.8
Hazardous Air Pollutant							
HCl			2.10E-04			3.68E-01	0.37
Antimony	1.80E-07	1.80E-07	1.80E-07	3.15E-04	3.15E-04	3.15E-04	3.15E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	9.81E-04	9.81E-04	9.81E-04	9.81E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	7.18E-04	7.18E-04	7.18E-04	7.18E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	9.64E-03	9.64E-03	9.64E-03	9.64E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	4.56E-05	4.56E-05	4.56E-05	4.56E-05
Lead	6.20E-07	1.50E-05	1.50E-05	1.09E-03	2.63E-02	2.63E-02	2.63E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	1.35E-02	1.35E-02	1.35E-02	1.35E-02
Mercury	2.40E-07	2.60E-06	2.60E-06	4.20E-04	4.56E-03	4.56E-03	4.56E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	0.11	0.11	0.11	0.11
Selenium	3.50E-07	3.50E-07	3.50E-07	6.13E-04	6.13E-04	6.13E-04	6.13E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.07	0.07	0.07	0.07
Acetaldehyde			1.30E-03			2.28	2.28
Acrolein			2.60E-05			4.56E-02	4.56E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.68	0.68	0.68	0.68
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.42	0.42	0.42	0.42
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	5.43	5.43	5.43	5.43
Hexane	9.20E-04	9.20E-04	9.20E-04	1.61	1.61	1.61	1.61
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.08	0.08	0.08	0.08
MEK			2.00E-05			0.04	0.04
Propionaldehyde			1.30E-04			0.23	0.23
Quinone			1.60E-04			0.28	0.28
Toluene	1.50E-04	2.90E-03	2.90E-03	0.26	5.08	5.08	5.08
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.33	1.54	1.54	1.54
Xylene	2.00E-04	2.00E-04	2.00E-04	0.35	0.35	0.35	0.35

Total HAPs 18.68

Worst Single HAP 5.43 (formaldehyde)

Methodology

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

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

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

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

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

Abbreviations

VOC - Volatile Organic Compounds

HAP = Hazardous Air Pollutant

HCl = Hydrogen Chloride

PAH = Polyaromatic Hydrocarbon

SO2 = Sulfur Dioxide

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

If slag not used enter value of 0, do not delete unlimited-dryer-mixer-slag worksheet.

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

Maximum Annual Slag Usage* = ton/yr % sulfur

	Emission Factor (lb/ton)**	Unlimited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.74	0.0

Methodology

This plant does not use slag.

Abbreviations

SO2 = Sulfur Dioxide

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

Company Name: Walsh & Kelly, Inc.
Source Location: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: F089-27021-05255
Reviewer: Janet Mobley

Maximum Hot Oil Heater Fuel Input Rate =	1.15	MMBtu/hr	
Natural Gas Usage (Hot Oil Heater) =	10	MMCF/yr	
No. 2 Fuel Oil Usage (Hot Oil Heater) =	71,957	gal/yr, and	0.50 % sulfur
Maximum Generator Fuel Input Rate =	0.0228	MMBtu/hr	
Natural Gas Usage (Generator) =	0.20	MMCF/yr	

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case Fuel (Hot Oil Heater) (tons/yr)
	Hot Oil Heater/Generator		Generator	Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	1.90E-04	0.010	0.072	0.07
PM10/PM2.5	7.6	3.3	7.59E-04	0.038	0.119	0.12
SO2	0.6	71.0	5.99E-05	0.003	2.554	2.55
NOx	100	20.0	9.99E-03	0.504	0.720	0.72
VOC	5.5	0.20	5.49E-04	0.028	0.007	0.03
CO	84	5.0	8.39E-03	0.423	0.180	0.42
Hazardous Air Pollutant						
Arsenic	2.0E-04	5.6E-04	2.0E-08	1.0E-06	2.01E-05	2.0E-05
Beryllium	1.2E-05	4.2E-04	1.2E-09	6.0E-08	1.51E-05	1.5E-05
Cadmium	1.1E-03	4.2E-04	1.1E-07	5.5E-06	1.51E-05	1.5E-05
Chromium	1.4E-03	4.2E-04	1.4E-07	7.1E-06	1.51E-05	1.5E-05
Cobalt	8.4E-05		8.4E-09	4.2E-07		4.2E-07
Lead	5.0E-04	1.3E-03	5.0E-08	2.5E-06	4.53E-05	4.5E-05
Manganese	3.8E-04	8.4E-04	3.8E-08	1.9E-06	3.02E-05	3.0E-05
Mercury	2.6E-04	4.2E-04	2.6E-08	1.3E-06	1.51E-05	1.5E-05
Nickel	2.1E-03	4.2E-04	2.1E-07	1.1E-05	1.51E-05	1.5E-05
Selenium	2.4E-05	2.1E-03	2.4E-09	1.2E-07	7.56E-05	7.6E-05
Benzene	2.1E-03		2.1E-07	1.1E-05		1.1E-05
Dichlorobenzene	1.2E-03		1.2E-07	6.0E-06		6.0E-06
Ethylbenzene						0.0E+00
Formaldehyde	7.5E-02	6.10E-02	7.5E-06	3.8E-04	2.19E-03	2.2E-03
Hexane	1.8E+00		1.8E-04	0.01		9.1E-03
Phenol						0.0E+00
Toluene	3.4E-03		3.4E-07	1.7E-05		1.7E-05
Total PAH Haps	negl		negl	negl		0.0E+00
Polycyclic Organic Matter		3.30E-03			1.19E-04	1.2E-04
Total HAPs =			1.9E-04	9.5E-03	2.6E-03	0.012

Methodology

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

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

Abbreviations

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

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

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

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

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

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

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

Methodology

The asphalt temperature and volatility factor were provided by the source.
 Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16
 Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14)::
 Total PM/PM10/PM2.5 Ef = 0.000181 + 0.00141(-V)e^((0.0251)(T+460)-20.43)
 Organic PM Ef = 0.00141(-V)e^((0.0251)(T+460)-20.43)
 TOC Ef = 0.0172(-V)e^((0.0251)(T+460)-20.43)
 CO Ef = 0.00558(-V)e^((0.0251)(T+460)-20.43)
 Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):
 PM/PM10 Ef = 0.000332 + 0.00105(-V)e^((0.0251)(T+460)-20.43)
 Organic PM Ef = 0.00105(-V)e^((0.0251)(T+460)-20.43)
 TOC Ef = 0.0504(-V)e^((0.0251)(T+460)-20.43)
 CO Ef = 0.00488(-V)e^((0.0251)(T+460)-20.43)
 On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32
 *No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

Abbreviations

TOC = Total Organic Compounds
 CO = Carbon Monoxide
 PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 HAP = Hazardous Air Pollutant
 VOC = Volatile Organic Compound

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

Company Name: Walsh & Kelly, Inc.
 Source Address: 21201 Wicker Avenue, Lowell, Indiana
 Permit Number: 089-27021-05255
 Reviewer: Janet Mobley

Organic Particulate-Based Compounds (Table 11.1-15)

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

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

Methodology

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

Abbreviations

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

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

Organic Volatile-Based Compounds (Table 11.1-16)

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

Methodology

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

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

Abbreviations

TOC = Total Organic Compounds

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

MTBE = Methyl tert butyl ether

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	1	1.16	1.50	0.317	0.111
Limestone	0	0.00	0.00	0.000	0.000
RAP	0.5	0.58	1.72	0.182	0.064
Gravel	0.5	0.58	1.62	0.171	0.060
Slag	0	0.00	0.00	0.000	0.000
Totals				0.67	0.23

Methodology

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

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

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

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

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PM2.5 = PM10

PTE = Potential to Emit

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

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

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

where: E_f = Emission factor (lb/ton)

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

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

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

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

Methodology

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

Material Screening and Conveying (AP-42 Section 11.19.2)

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

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

Methodology

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

Abbreviations

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

Appendix A.1: Emissions Calculations

**Unpaved Roads
Unlimited Emissions**

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

Unpaved Roads at Industrial Site

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

Maximum Annual Asphalt Production = 3,504,000 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 3,328,800 tons/yr
Maximum Asphalt Cement/Binder Throughput = 175,200 tons/yr
Maximum No. 2 Fuel Oil Usage = 7,508,571 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	1.5E+05	5.9E+06	300	0.057	8443.6
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.5E+05	2.5E+06	300	0.057	8443.6
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	4.9E+03	2.3E+05	300	0.057	276.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	4.9E+03	5.8E+04	300	0.057	276.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	7.9E+02	3.5E+04	300	0.057	45.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	7.9E+02	9.5E+03	300	0.057	45.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	7.9E+05	1.5E+07	300	0.057	45032.5
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	7.9E+05	1.2E+07	300	0.057	45032.5
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.5E+05	6.0E+06	300	0.057	8295.5
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.5E+05	2.5E+06	300	0.057	8295.5
Total					2.2E+06	4.4E+07			1.2E+05

Average Vehicle Weight Per Trip = 20.3 tons/trip
Average Miles Per Trip = 0.057 miles/trip

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

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

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

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

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

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	25.73	6.56	0.66	16.92	4.31	0.43	8.46	2.16	0.22
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	25.73	6.56	0.66	16.92	4.31	0.43	8.46	2.16	0.22
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.843	0.215	0.02	0.554	0.141	0.01	0.277	0.071	0.01
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.843	0.215	0.02	0.554	0.141	0.01	0.277	0.071	0.01
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.137	0.035	0.00	0.090	0.023	0.00	0.045	0.012	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.137	0.035	0.00	0.090	0.023	0.00	0.045	0.012	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	137.23	34.98	3.50	90.24	23.00	2.30	45.12	11.50	1.15
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	137.23	34.98	3.50	90.24	23.00	2.30	45.12	11.50	1.15
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	25.28	6.44	0.64	16.62	4.24	0.42	8.31	2.12	0.21
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	25.28	6.44	0.64	16.62	4.24	0.42	8.31	2.12	0.21
Totals		378.45	96.45	9.65	248.84	63.42	6.34	124.42	31.71	3.17

Methodology

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

Abbreviations

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

Appendix A: Emissions Calculations

**Paved Roads
Unlimited Emissions**

Company Name: Walsh & Kelly, Inc.
 Source Address: 21201 Wicker Avenue, Lowell, Indiana
 Permit Number: 089-27021-05255
 Reviewer: Janet Mobley

Paved Roads at Industrial Site

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

Maximum Annual Asphalt Production	= 3,504,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	= 5.0%	
Maximum Material Handling Throughput	= 3,328,800	tons/yr
Maximum Asphalt Cement/Binder Throughput	= 175,200	tons/yr
Maximum No. 2 Fuel Oil Usage	= 7,508,571	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	1.5E+05	5.9E+06	300	0.057	8443.6
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	300	0.057	8443.6
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	4.9E+03	2.3E+05	300	0.057	276.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	4.9E+03	5.8E+04	300	0.057	276.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	7.9E+02	3.5E+04	300	0.057	45.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	7.9E+02	9.5E+03	300	0.057	45.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	7.9E+05	1.5E+07	300	0.057	45032.5
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	7.9E+05	1.2E+07	300	0.057	45032.5
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.5E+05	6.0E+06	300	0.057	8295.5
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	300	0.057	8295.5
Total					2.2E+06	4.4E+07			1.2E+05

Average Vehicle Weight Per Trip = 20.3 tons/trip
 Average Miles Per Trip = 0.057 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL/2)^0.65 * (W/3)^1.5 - C] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	0.00036	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

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 =	0.66	0.13	0.02	lb/mile
Mitigated Emission Factor, Eext =	0.60	0.12	0.02	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	2.78	0.54	0.08	2.54	0.49	0.07	1.27	0.25	0.04
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	2.78	0.54	0.08	2.54	0.49	0.07	1.27	0.25	0.04
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.091	0.018	2.6E-03	0.083	0.016	2.4E-03	0.042	8.1E-03	1.2E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.091	0.018	2.6E-03	0.083	0.016	2.4E-03	0.042	8.1E-03	1.2E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.5E-02	2.9E-03	4.3E-04	1.4E-02	2.6E-03	3.9E-04	6.8E-03	1.3E-03	1.9E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.5E-02	2.9E-03	4.3E-04	1.4E-02	2.6E-03	3.9E-04	6.8E-03	1.3E-03	1.9E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	14.81	2.88	0.43	13.54	2.63	0.39	6.77	1.32	0.19
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	14.81	2.88	0.43	13.54	2.63	0.39	6.77	1.32	0.19
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	2.73	0.53	0.08	2.49	0.49	0.07	1.25	0.24	0.04
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	2.73	0.53	0.08	2.49	0.49	0.07	1.25	0.24	0.04
Totals		40.84	7.95	1.17	37.34	7.27	1.07	18.67	3.63	0.54

Methodology

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

Abbreviations

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

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

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

Volatile Organic Compounds

	Maximum weight % of VOC solvent in binder*	Weight % VOC solvent in binder that evaporates	Maximum VOC Solvent Usage (tons/yr)	PTE of VOC (tons/yr)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	44325.6	42109.3
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	50107.2	35075.0
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	35040.0	8760.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	26280.0	12193.9
Other asphalt with solvent binder	25.9%	2.5%	45376.8	1134.4
Worst Case PTE of VOC =				42109.3

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
PTE of Total HAPs (tons/yr) =	10983.67
PTE of Single HAP (tons/yr) =	3789.84 Xylenes

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

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

Methodology

Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] * [Maximum Weight % of VOC Solvent in Binder]
PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [Maximum VOC Solvent Usage (tons/yr)]
PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tp.htm>

Abbreviations

VOC = Volatile Organic Compounds
PTE = Potential to Emit

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

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

Volatile Organic Compounds

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

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%	
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0%	Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00	
Limited PTE of Single HAP (tons/yr) =	0.00	Xylenes

Methodology

This plant does not have gasoline fuel transfer operation.

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

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

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

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tp.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Emissions Calculations
Limited Emission Summary**

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

Asphalt Plant Limitations

Maximum Hourly Asphalt Production =	400	ton/hr								
Annual Asphalt Production Limitation =	500,000	ton/yr								
Slag Usage Limitation =	140,000	ton/yr	1.50	% sulfur						
Natural Gas Limitation =	1,034.20	MMCF/yr								
No. 2 Fuel Oil Limitation =	1,134,636	gal/yr, and	0.50	% sulfur						
Used/Waste Oil Limitation =	900,000	gal/yr, and	0.66	% sulfur	0.50	% ash	0.200	% chlorine,	0.010	% lead
PM Dryer/Mixer Limitation =	0.879	lb/ton of asphalt production								
PM10 Dryer/Mixer Limitation =	0.360	lb/ton of asphalt production								
PM2.5 Dryer/Mixer Limitation =	0.378	lb/ton of asphalt production								
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production								
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production								
Slag SO2 Dryer/Mixer Limitation =	0.740	lb/ton of slag processed								
Cold Mix Asphalt VOC Usage Limitation =	10.8	tons/yr								

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)								
	Criteria Pollutants							Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
Ducted Emissions									
Dryer Fuel Combustion (worst case)	14.40	11.48	11.48	44.53	98.25	2.84	43.44	7.28	5.94 (hydrogen chloride)
Dryer/Mixer (Process)	219.87	89.90	94.62	14.50	13.75	8.00	32.50	2.66	0.78 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	51.80	0	0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	0.08	0.12	0.12	2.67	0.75	0.01	0.19	0.00	0.002 (hexane)
Generator	0.0002	0.0008	0.001	0.003	0.010	0.001	0.008	0.0002	0.00018 (hexane)
Worst Case Emissions*	219.95	90.02	94.74	99.00	99.01	8.01	43.63	7.28	5.94 (hydrogen chloride)
Fugitive Emissions									
Asphalt Load-Out, Silo Filling, On-Site Yard	0.28	0.28	0.28	0	0	4.28	0.72	0.07	0.02 (formaldehyde)
Material Storage Piles	1.47	0.52	0.52	0	0	0	0	0	0
Material Processing and Handling	1.62	0.76	0.12	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	7.93	2.90	2.90	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	17.76	4.53	0.45	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	10.76	0	2.81	0.97 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.00	0	0.09	0.00 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	negl
Total Fugitive Emissions	29.05	8.98	4.26	0	0	15.04	0.72	2.97	0.97 (xylenes)
Totals Limited/Controlled Emissions	249.00	99.00	99.00	99.00	99.01	23.05	44.35	10.25	5.94

negl = negligible

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

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion + generator

This plant does not use slag.

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

Company Name: Walsh & Kelly, Inc.
 Source Address: 21201 Wicker Avenue, Lowell, Indiana
 Permit Number: 089-27021-05255
 Reviewer: Janet Mobley

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

Production and Fuel Limitations

Maximum Hourly Asphalt Production =	400	ton/hr
Annual Asphalt Production Limitation =	500,000	ton/yr
Natural Gas Limitation =	1,034	MMCF/yr
No. 2 Fuel Oil Limitation =	1,134,636	gal/yr, and 0.50 % sulfur
Used/Waste Oil Limitation =	900,000	gal/yr, and 0.66 % sulfur, 0.50 % ash, 0.200 % chlorine, 0.010 % lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)			Limited Potential to Emit (tons/yr)			Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	Used/ Waste Oil (tons/yr)	
PM	1.9	2	32	0.98	1.13	14.40	14.40
PM10	7.6	3.3	25.5	3.93	1.87	11.48	11.48
SO2	0.6	78.5	97.0	0.31	44.53	43.66	44.53
NOx	190	24.0	19.0	98.25	13.62	8.55	98.25
VOC	5.5	0.20	1.0	2.84	0.11	0.45	2.84
CO	84	5.0	5.0	43.44	2.84	2.25	43.44
Hazardous Air Pollutant							
HCl			13.2			5.94	5.94
Antimony			negl			negl	0.0E+00
Arsenic	2.0E-04	5.6E-04	1.1E-01	1.0E-04	3.18E-04	4.95E-02	5.0E-02
Beryllium	1.2E-05	4.2E-04	negl	6.2E-06	2.38E-04	negl	2.4E-04
Cadmium	1.1E-03	4.2E-04	9.3E-03	5.7E-04	2.38E-04	4.19E-03	4.2E-03
Chromium	1.4E-03	4.2E-04	2.0E-02	7.2E-04	2.38E-04	9.00E-03	9.0E-03
Cobalt	8.4E-05		2.1E-04	4.3E-05		9.45E-05	9.5E-05
Lead	5.0E-04	1.3E-03	0.55	2.6E-04	7.15E-04	2.5E-01	0.25
Manganese	3.8E-04	8.4E-04	6.8E-02	2.0E-04	4.77E-04	3.06E-02	0.03
Mercury	2.6E-04	4.2E-04		1.3E-04	2.38E-04		2.4E-04
Nickel	2.1E-03	4.2E-04	1.1E-02	1.1E-03	2.38E-04	4.95E-03	0.005
Selenium	2.4E-05	2.1E-03	negl	1.2E-05	1.19E-03	negl	1.2E-03
1,1,1-Trichloroethane							0.0E+00
1,3-Butadiene							0.0E+00
Acetaldehyde							0.0E+00
Acrolein							0.0E+00
Benzene	2.1E-03			1.1E-03			1.1E-03
Bis(2-ethylhexyl)phthalate			2.2E-03			9.90E-04	9.9E-04
Dichlorobenzene	1.2E-03		8.0E-07	6.2E-04		3.60E-07	6.2E-04
Ethylbenzene							0.0E+00
Formaldehyde	7.5E-02	6.10E-02		3.9E-02	3.46E-02		0.039
Hexane	1.8E+00			0.93			0.931
Phenol			2.4E-03			1.08E-03	1.1E-03
Toluene	3.4E-03			1.8E-03			1.8E-03
Total PAH Haps	negl		3.9E-02			1.76E-02	1.8E-02
Polycyclic Organic Matter		3.30E-03				1.87E-03	1.9E-03
Xylene							0.0E+00
				0.98	0.04	6.31	7.28

Methodology

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

- Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
- No. 2, No.4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
- Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
- Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5
- Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Tables 3.3-1 and 3.3-2

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

Abbreviations

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

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

Maximum Hourly Asphalt Production =	400	ton/hr
Annual Asphalt Production Limitation =	500,000	ton/yr
PM Dryer/Mixer Limitation =	0.879	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.360	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.378	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.879	0.879	0.879	219.9	219.9	219.9	219.9
PM10*	0.360	0.360	0.360	89.9	89.9	89.9	89.9
PM2.5*	0.378	0.378	0.378	94.6	94.6	94.6	94.6
SO2**	0.003	0.011	0.058	0.9	2.8	14.5	14.5
NOx**	0.026	0.055	0.055	6.5	13.8	13.8	13.8
VOC**	0.032	0.032	0.032	8.0	8.0	8.0	8.0
CO***	0.130	0.130	0.130	32.5	32.5	32.5	32.5
Hazardous Air Pollutant							
HCl			2.10E-04			0.05	0.05
Antimony	1.80E-07	1.80E-07	1.80E-07	4.50E-05	4.50E-05	4.50E-05	4.50E-05
Arsenic	5.60E-07	5.60E-07	5.60E-07	1.40E-04	1.40E-04	1.40E-04	1.40E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	1.03E-04	1.03E-04	1.03E-04	1.03E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	1.38E-03	1.38E-03	1.38E-03	1.38E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	6.50E-06	6.50E-06	6.50E-06	6.50E-06
Lead	6.20E-07	1.50E-05	1.50E-05	1.55E-04	3.75E-03	3.75E-03	3.75E-03
Manganese	7.70E-06	7.70E-06	7.70E-06	1.93E-03	1.93E-03	1.93E-03	1.93E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	6.00E-05	6.50E-04	6.50E-04	6.50E-04
Nickel	6.30E-05	6.30E-05	6.30E-05	1.58E-02	1.58E-02	1.58E-02	1.58E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	8.75E-05	8.75E-05	8.75E-05	8.75E-05
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	1.00E-02	1.00E-02	1.00E-02	1.00E-02
Acetaldehyde			1.30E-03			0.33	0.33
Acrolein			2.60E-05			6.50E-03	6.50E-03
Benzene	3.90E-04	3.90E-04	3.90E-04	0.10	0.10	0.10	0.10
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.06	0.06	0.06	0.06
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	0.78	0.78	0.78	0.78
Hexane	9.20E-04	9.20E-04	9.20E-04	0.23	0.23	0.23	0.23
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.01	0.01	0.01	0.01
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.03	0.03
Quinone			1.60E-04			0.04	0.04
Toluene	1.50E-04	2.90E-03	2.90E-03	0.04	0.73	0.73	0.73
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.05	0.22	0.22	0.22
Xylene	2.00E-04	2.00E-04	2.00E-04	0.05	0.05	0.05	0.05
Total HAPs						2.66	
Worst Single HAP						0.775	(formaldehyde)

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

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

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

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

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

Abbreviations

- VOC - Volatile Organic Compounds
- HAP = Hazardous Air Pollutant
- HCl = Hydrogen Chloride
- PAH = Polyaromatic Hydrocarbon
- SO2 = Sulfur Dioxide

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

Slag Usage Limitation =

140,000

 ton/yr
 SO2 Slag Limitation =

0.740

 lb/ton of slag processed

1.50

 % sulfur

	Emission Factor or Limitation (lb/ton)*	Limited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.740	51.8

Methodology

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

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

Abbreviations

SO2 = Sulfur Dioxide

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

Company Name: Walsh & Kelly, Inc.
Source Location: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: F089-27021-05255
Reviewer: Janet Mobley

Maximum Hot Oil Heater Fuel Input Rate =	1.20	MMBtu/hr	
Natural Gas Usage (Hot Oil Heater) =	11	MMCF/yr	
No. 2 Fuel Oil Usage (Hot Oil Heater) =	75,086	gal/yr, and	0.50 % sulfur
Maximum Generator Fuel Input Rate =	0.0228	MMBtu/hr	
Natural Gas Usage (Generator) =	0.20	MMCF/yr	

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case Fuel (Hot Oil Heater) (tons/yr)
	Hot Oil Heater/Generator		Generator	Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	1.90E-04	0.010	0.075	0.08
PM10/PM2.5	7.6	3.3	7.59E-04	0.040	0.124	0.12
SO2	0.6	71.0	5.99E-05	0.003	2.666	2.67
NOx	100	20.0	9.99E-03	0.526	0.751	0.75
VOC	5.5	0.20	5.49E-04	0.029	0.008	0.03
CO	84	5.0	8.39E-03	0.442	0.188	0.44
Hazardous Air Pollutant						
Arsenic	2.0E-04	5.6E-04	2.0E-08	1.1E-06	2.10E-05	2.1E-05
Beryllium	1.2E-05	4.2E-04	1.2E-09	6.3E-08	1.58E-05	1.6E-05
Cadmium	1.1E-03	4.2E-04	1.1E-07	5.8E-06	1.58E-05	1.6E-05
Chromium	1.4E-03	4.2E-04	1.4E-07	7.4E-06	1.58E-05	1.6E-05
Cobalt	8.4E-05		8.4E-09	4.4E-07		4.4E-07
Lead	5.0E-04	1.3E-03	5.0E-08	2.6E-06	4.73E-05	4.7E-05
Manganese	3.8E-04	8.4E-04	3.8E-08	2.0E-06	3.15E-05	3.2E-05
Mercury	2.6E-04	4.2E-04	2.6E-08	1.4E-06	1.58E-05	1.6E-05
Nickel	2.1E-03	4.2E-04	2.1E-07	1.1E-05	1.58E-05	1.6E-05
Selenium	2.4E-05	2.1E-03	2.4E-09	1.3E-07	7.88E-05	7.9E-05
Benzene	2.1E-03		2.1E-07	1.1E-05		1.1E-05
Dichlorobenzene	1.2E-03		1.2E-07	6.3E-06		6.3E-06
Ethylbenzene						0
Formaldehyde	7.5E-02	6.10E-02	7.5E-06	3.9E-04	2.29E-03	0.002
Hexane	1.8E+00		1.8E-04	0.01		0.009
Phenol						0
Toluene	3.4E-03		3.4E-07	1.8E-05		1.8E-05
Total PAH Haps	negl		negl	negl		0
Polycyclic Organic Matter		3.30E-03			1.24E-04	1.2E-04
Total HAPs =			1.9E-04	9.9E-03	2.7E-03	0.012

Methodology

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

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

Abbreviations

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

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Annual Asphalt Production Limitation =	500,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.13	0.15	NA	0.28
Organic PM	3.4E-04	2.5E-04	NA	0.09	0.063	NA	0.15
TOC	0.004	0.012	0.001	1.04	3.05	0.275	4.4
CO	0.001	0.001	3.5E-04	0.34	0.295	0.088	0.72

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

PM/HAPs	0.006	0.007	0	0.013
VOC/HAPs	0.015	0.039	0.004	0.058
non-VOC/HAPs	8.0E-05	8.2E-06	2.1E-05	1.1E-04
non-VOC/non-HAPs	0.08	0.04	0.02	0.14

Total VOCs	0.98	3.05	0.3	4.3
Total HAPs	0.02	0.05	0.004	0.07
		Worst Single HAP		0.022
				(formaldehyde)

Methodology

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Abbreviations

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate

Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

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

Company Name: Walsh & Kelly, Inc.
 Source Address: 21201 Wicker Avenue, Lowell, Indiana
 Permit Number: 089-27021-05255
 Reviewer: Janet Mobley

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	2.2E-04	3.0E-04	NA	5.2E-04
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	2.4E-05	8.9E-06	NA	3.3E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	6.0E-05	8.3E-05	NA	1.4E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.6E-05	3.6E-05	NA	5.2E-05
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	6.5E-06	0	NA	6.5E-06
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.9E-06	0	NA	1.9E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.6E-06	0	NA	1.6E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	2.0E-06	0	NA	2.0E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	6.6E-06	6.0E-06	NA	1.3E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	8.8E-05	1.3E-04	NA	2.2E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	3.2E-07	0	NA	3.2E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	4.3E-05	9.5E-05	NA	1.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	6.6E-04	6.4E-04	NA	1.3E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	4.0E-07	0	NA	4.0E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	2.0E-03	3.3E-03	NA	0.005
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	1.1E-03	1.2E-03	NA	2.2E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.9E-05	1.9E-05	NA	3.8E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	6.9E-04	1.1E-03	NA	1.8E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	1.3E-04	2.8E-04	NA	4.1E-04
Total PAH HAPs							0.005	0.007	NA	0.012
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	1.0E-03	0	0	1.0E-03

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

Methodology

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

Abbreviations

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

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

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	0.98	3.05	0.26	4.28
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	6.8E-02	7.9E-03	1.8E-02	0.093
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	4.8E-04	1.7E-03	1.3E-04	0.002
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	7.4E-03	3.4E-02	2.0E-03	0.043
Total non-VOC/non-HAPS					7.30%	1.40%	0.076	0.043	0.020	0.14
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	5.4E-04	9.7E-04	1.4E-04	1.7E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	1.0E-04	1.5E-04	2.6E-05	2.8E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	5.1E-04	1.2E-03	1.3E-04	1.8E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	1.4E-04	4.9E-04	3.6E-05	6.6E-04
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	2.2E-06	1.2E-04	5.8E-07	1.2E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.6E-04	7.0E-04	4.1E-05	9.0E-04
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	1.1E-03	0	3.0E-04	1.4E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	2.9E-03	1.2E-03	7.7E-04	0.005
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	9.1E-04	2.1E-02	2.4E-04	0.022
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.6E-03	3.0E-03	4.1E-04	0.005
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.9E-05	9.4E-06	5.0E-06	3.3E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	8.2E-06	0	8.2E-06
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	7.6E-05	1.6E-04	2.0E-05	2.6E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	8.0E-05	0	2.1E-05	1.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	2.2E-03	1.9E-03	5.8E-04	0.005
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	1.4E-05	0	3.6E-06	1.7E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	4.3E-03	6.1E-03	1.1E-03	0.011
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	8.3E-04	1.7E-03	2.2E-04	2.8E-03
Total volatile organic HAPs					1.50%	1.30%	0.016	0.040	0.004	0.059

Methodology

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

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

Abbreviations

TOC = Total Organic Compounds

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

MTBE = Methyl tert butyl ether

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	1	1.16	1.50	0.317	0.111
Limestone	0	0.00	0.00	0.000	0.000
RAP	0.5	0.58	1.72	0.182	0.064
Gravel	0.5	0.58	1.62	0.171	0.060
Course Aggregate	0	0.00	1.62	0.000	0.000
Slag	3.8	4.40	1.00	0.803	0.281
Totals				1.47	0.52

Methodology

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

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

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

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

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PM2.5 = PM10

PTE = Potential to Emit

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

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

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

where: E_f = Emission factor (lb/ton)

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

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

Annual Asphalt Production Limitation = 500,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 475,000 tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	0.54	0.25	0.04
Front-end loader dumping of materials into feeder bins	0.54	0.25	0.04
Conveyor dropping material into dryer/mixer or batch tower	0.54	0.25	0.04
Total (tons/yr)	1.62	0.76	0.12

Methodology

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

Material Screening and Conveying (AP-42 Section 19.2.2)

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	1.28	0.57
Screening	0.025	0.0087	5.94	2.07
Conveying	0.003	0.0011	0.71	0.26
Limited Potential to Emit (tons/yr) =			7.93	2.90

Methodology

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

Abbreviations

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

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

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

Unpaved Roads at Industrial Site

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

Annual Asphalt Production Limitation	500,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	475,000	tons/yr
Maximum Asphalt Cement/Binder Throughput	25,000	tons/yr
No. 2 Fuel Oil Limitation	1,134,636	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	2.1E+04	8.4E+05	300	0.057	1204.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	2.1E+04	3.6E+05	300	0.057	1204.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	6.9E+02	3.3E+04	300	0.057	39.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	6.9E+02	8.3E+03	300	0.057	39.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	1.2E+02	5.3E+03	300	0.057	6.8
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.2E+02	1.4E+03	300	0.057	6.8
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	1.1E+05	2.2E+06	300	0.057	6425.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	1.1E+05	1.7E+06	300	0.057	6425.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	2.1E+04	8.5E+05	300	0.057	1183.7
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	2.1E+04	3.5E+05	300	0.057	1183.7
Total						3.1E+05	6.3E+06		1.8E+04

Average Vehicle Weight Per Trip	20.3	tons/trip
Average Miles Per Trip	0.057	miles/trip

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

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

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

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

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

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	3.67	0.94	0.09	2.41	0.62	0.06	1.21	0.31	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	3.67	0.94	0.09	2.41	0.62	0.06	1.21	0.31	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.120	0.031	0.00	0.079	0.020	2.0E-03	0.040	0.010	1.0E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.120	0.031	0.00	0.079	0.020	2.0E-03	0.040	0.010	1.0E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.021	0.005	5.3E-04	0.014	0.003	3.5E-04	0.007	0.002	1.7E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.021	0.005	5.3E-04	0.014	0.003	3.5E-04	0.007	0.002	1.7E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	19.58	4.99	0.50	12.88	3.28	0.33	6.44	1.64	0.16
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	19.58	4.99	0.50	12.88	3.28	0.33	6.44	1.64	0.16
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	3.61	0.92	0.09	2.37	0.60	0.06	1.19	0.30	0.03
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	3.61	0.92	0.09	2.37	0.60	0.06	1.19	0.30	0.03
Totals		54.01	13.76	1.38	35.51	9.05	0.91	17.76	4.53	0.45

Methodology

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

Abbreviations

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

**Appendix A.2: Emissions Calculations
Paved Roads
Limited Emissions**

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

Paved Roads at Industrial Site

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

Annual Asphalt Production Limitation =	500,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	475,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	25,000	tons/yr
No. 2 Fuel Oil Limitation =	1,134,636	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	2.1E+04	8.4E+05	300	0.057	1204.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	2.1E+04	3.6E+05	300	0.057	1204.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	6.9E+02	3.3E+04	300	0.057	39.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	6.9E+02	8.3E+03	300	0.057	39.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	1.2E+02	5.3E+03	300	0.057	6.8
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.2E+02	1.4E+03	300	0.057	6.8
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	1.1E+05	2.2E+06	300	0.057	6425.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	1.1E+05	1.7E+06	300	0.057	6425.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	2.1E+04	8.5E+05	300	0.057	1183.7
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	2.1E+04	3.5E+05	300	0.057	1183.7
Total					3.1E+05	6.3E+06			1.8E+04

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

Unmitigated Emission Factor, Ef = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	0.00036	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

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 =	0.66	0.13	0.02	lb/mile
Mitigated Emission Factor, Eext =	0.60	0.12	0.02	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.40	0.08	0.01	0.36	0.07	0.01	0.18	0.04	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.40	0.08	0.01	0.36	0.07	0.01	0.18	0.04	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.013	0.003	3.7E-04	0.012	0.002	3.4E-04	0.006	1.2E-03	1.7E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.013	0.003	3.7E-04	0.012	0.002	3.4E-04	0.006	1.2E-03	1.7E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	2.2E-03	4.4E-04	6.4E-05	2.0E-03	4.0E-04	5.9E-05	1.0E-03	2.0E-04	2.9E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	2.2E-03	4.4E-04	6.4E-05	2.0E-03	4.0E-04	5.9E-05	1.0E-03	2.0E-04	2.9E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	2.11	0.41	0.06	1.93	0.38	0.06	0.97	0.19	0.03
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	2.11	0.41	0.06	1.93	0.38	0.06	0.97	0.19	0.03
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.39	0.08	0.01	0.36	0.07	0.01	0.18	0.03	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.39	0.08	0.01	0.36	0.07	0.01	0.18	0.03	0.01
Totals		5.83	1.13	0.17	5.33	1.04	0.15	2.66	0.52	0.08

Methodology

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

Abbreviations

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

Appendix A.2: Emissions Calculations
Cold Mix Asphalt Production and Stockpiles
Limited Emissions

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

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

Cold Mix Asphalt VOC Usage Limitation = 10.8 tons/yr

Volatile Organic Compounds

	Maximum weight % of VOC solvent in binder	Weight % VOC solvent in binder that evaporates	VOC Solvent Usage Limitation (tons/yr)	Limited PTE of VOC (tons/yr)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	11.3	10.8
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	15.4	10.8
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	43.0	10.8
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	23.2	10.8
Other asphalt with solvent binder	25.9%	2.5%	430.4	10.8
Worst Case Limited PTE of VOC =				10.8

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %) =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %) =	9.0% Xylenes
Limited PTE of Total HAPs (tons/yr) =	2.81
Limited PTE of Single HAP (tons/yr) =	0.97 Xylenes

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

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

Methodology

Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [VOC Solvent Usage Limitation (tons/yr)]

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

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2.

Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at:

<http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Emissions Calculations
Gasoline Fuel Transfer and Dispensing Operation
Limited Emissions**

Company Name: Walsh & Kelly, Inc.
Source Address: 21201 Wicker Avenue, Lowell, Indiana
Permit Number: 089-27021-05255
Reviewer: Janet Mobley

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.

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

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

Volatile Organic Compounds

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

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%	
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0%	Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00	
Limited PTE of Single HAP (tons/yr) =	0.00	Xylenes

Methodology

The plant does not have gasoline fuel operation.

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

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

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

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.3: Emissions Calculations
Fuel Equivalency Calculations
Fuel Combustion Units with Maximum Capacity > 100 MMBtu/hr**

**Company Name: Walsh & Kelly, Inc.
Address City IN Zip: 21201 Wicker Avenue, Lowell, Indiana 46356
Permit Number: F089-27021-05255
Reviewer: Janet Mobley**

Fuel Type	SO ₂ Equivalency						NO _x Equivalency			
	Limited Sulfur Content	Limited Sulfur Content Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units
Natural Gas	NA	NA	0.6	lb/MMCF	161.7	MMCF natural gas / 1000 gal waste oil	190	lb/MMCF	1.000	MMCF natural gas / MMCF natural gas
No. 2 Fuel Oil	0.50	% by weight	78.50	lb/kgal	1.24	gal No. 2 fuel oil / gal waste oil	24.0	lb/kgal	0.126	MMCF natural gas/1000 gal No. 2
Waste Oil	0.66	% by weight	97.02	lb/kgal	1.00	gal waste oil / gal waste oil	19.0	lb/kgal	0.100	MMCF natural gas/ 1000 gal waste oil

Methodology

SO₂ Fuel Equivalency = [AP-42 Emission Factor for waste oil (lb/kgal)] / [AP-42 Emission Factor for any fuel type (lb/kgal or lb/MMCF)]

NO_x Fuel Equivalency = [AP-42 Emission Factor for any any fuel type (lb/kgal)]/[AP-42 Emission Factor for natural gas (lb/MMCF)]

Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas (boiler > 100 MMBtu/hr): AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1 and 1.4-2

No. 2, No.4, and residual fuel oil (industrial boiler > 100 MMBtu/hr): AP-42 Chapter 1.3 (dated 9/98), Table 1.3-1

Propane and Butane (industrial boiler 10 to 100 MMBtu/hr): AP-42 Chapter 1.5 (dated 10/96), Table 1.5-1

Waste Oil (small boiler): AP-42 Chapter 1.11 (dated 10/96), Table 1.11-2

Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Table 3.3-1



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

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

TO: Robert Knip
Walsh & Kelly, Inc.
2583 S SR
South Bend, Indiana 46614

DATE: August 4, 2009

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

SUBJECT: Final Decision
FESOP
089-27021-05255

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:
Dana Armstrong
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.

Final Applicant Cover letter.dot 11/30/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

August 4, 2009

TO: Lowell Public Library

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

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

Applicant Name: Walsh & Kelly, Inc.
Permit Number: 089-27021-05255

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 11/30/07

Mail Code 61-53

IDEM Staff	CDENNY 8/4/2009 Walsh & Kelly, Inc. 089-27021-05255 (final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Robert Knip Walsh & Kelly, Inc. 2583 S SR South Bend IN 46614 (Source CAATS) VIA CONFIRMED DELIVERY										
2		Gary - Hobart Water Corp 650 Madison St, P.O. Box M486 Gary IN 46401-0486 (Affected Party)										
3		Lake County Health Department-Gary 1145 W. 5th Ave Gary IN 46402-1795 (Health Department)										
4		WJOB / WZVN Radio 6405 Olcott Ave Hammond IN 46320 (Affected Party)										
5		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party)										
6		Lowell Public Library 1505 East Commercial Lowell IN 46356 (Library)										
7		Lowell Town Council and Town Manager PO Box 157, 501 East Main Street Lowell IN 46356 (Local Official)										
8		Shawn Sobocinski 3229 E. Atlanta Court Portage IN 46368 (Affected Party)										
9		Ms. Carolyn Marsh Lake Michigan Calumet Advisory Council 1804 Oliver St Whiting IN 46394-1725 (Affected Party)										
10		Mark Coleman 9 Locust Place Ogden Dunes IN 46368 (Affected Party)										
11		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 (Affected Party)										
12		Craig Hogarth 7901 West Morris Street Indianapolis IN 46231 (Affected Party)										
13		Lake County Commissioners 2293 N. Main St, Building A 3rd Floor Crown Point IN 46307 (Local Official)										
14		Anthony Copeland 2006 E. 140th Street East Chicago IN 46312 (Affected Party)										
15		Barbara G. Perez 506 Lilac Street East Chicago IN 46312 (Affected Party)										

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
14			

Mail Code 61-53

IDEM Staff	CDENNY 8/4/2009 Walsh & Kelly, Inc. 089-27021-05255 (final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Robert 3733 Parrish Avenue East Chicago IN 46312 (Affected Party)										
2		Dana Armstrong DECA Environmental & Associates, Inc. 410 1st Avenue NE Carmel IN 46032 (Consultant)										
3		Ms. Karen Kroczek 8212 Madison Ave Munster IN 46321-1627 (Affected Party)										
4		Calumet Township Trustee 35 E 5th Avenue Gary IN 46402 (Affected Party)										
5		Joseph Hero 11723 S Oakridge Drive St. John IN 46373 (Affected Party)										
6		Gary City Council 401 Broadway # 209 Gary IN 46402 (Local Official)										
7												
8												
9												
10												
11												
12												
13												
14												
15												

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
6			