Mr. Daniel T. Crago
Paul H. Rohe Company, Inc.
P.O. Box 67
Aurora, Indiana 47001

Re: **029-12072**
Second Significant Revision to
FESOP 029-7416-03187

Dear Mr. Crago:

Paul H. Rohe Company, Inc. was issued a permit on July 7, 1997 for a stationary hot mix asphalt batch plant. A letter requesting changes to this permit was received on March 22, 2000. Pursuant to the provisions of 326 IAC 2-8-11.1 a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document.

The modification consists of adding an additional 150 ton capacity surge silo to their existing plant which would allow the plant to run more consistently, which in turn will increase the capacity of the plant from 150 tons per hour to 225 tons per hour.

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions
   The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit
   Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Trish Earls, c/o OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call at (973) 575-2555, ext. 3219, or dial (800) 451-6027, press 0 and ask for extension 3-6878.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

Attachments
TE/EVP
cc: File - Dearborn County
U.S. EPA, Region V
Dearborn County Health Department
Air Compliance Section Inspector - Warren Greiling
Compliance Data Section - Jerri Curless
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michelle Boner

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) and ENHANCED NEW SOURCE REVIEW (ENSR) OFFICE OF AIR MANAGEMENT

Paul H. Rohe Company, Inc.
3919 East Laughery Creek Road
Aurora, Indiana 47001

(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.

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.

Operation Permit No.: F029-7416-03187	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: July 7, 1997

First Significant Modification: SMF 029-9881	Pages Affected: 4, 23-26, 30a
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: September 14, 1998

Second Significant Permit Revision: SPR 029-12072	Pages Affected: 4, 5, 16, 23-26
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary hot mix asphalt batch plant.

Authorized Individual:	Daniel T. Crago, Environmental and Quality Control Manager
Source Address:	3919 East Laughery Creek Road, Aurora, Indiana 47001
Mailing Address:	P.O. Box 67, Aurora, Indiana 47001
Phone Number:	812-926-1471
SIC Code:	2951
County Location:	Dearborn
County Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act

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

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

(a) one (1) aggregate rotary dryer, with a maximum capacity of 225 tons per hour, equipped with one (1) No. 2 distillate fuel oil fired aggregate dryer burner with a maximum rated capacity of 33.12 million (MM) British thermal units (Btu) per hour, using one (1) cyclone and one (1) jet pulse baghouse for air pollution control, and exhausting at one (1) stack, identified as SV/1;
(b) one (1) enclosed mixing and batching tower with a maximum capacity of 225 tons per hour;
(c) one (1) cold aggregate feeder conveyor;
(d) one (1) recycled asphalt pavement (RAP) feeder conveyor; and
(e) one (1) surge silo, with a maximum hot mix asphalt storage capacity of 150 tons.

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

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) one (1) liquid asphalt storage tank, identified as Tank 1, with a maximum storage capacity of 20,000 gallons;
(b) one (1) liquid asphalt storage tank, identified as Tank 2, with a maximum storage capacity of 10,000 gallons;
(c) one (1) No. 2 distillate fuel oil storage tank, identified as Tank 3, with a maximum storage capacity of 12,000 gallons;
(d) one (1) No. 2 distillate fuel oil storage tank, identified as Tank 4, with a maximum storage capacity of 500 gallons;
(e) a gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons;

(f) cleaners and solvents having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20ºC (68ºF); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months; and

(g) paved and unpaved roads and parking lots with public access.

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

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

A.5 Prior Permit Conditions

(a) This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, including any term or condition from a previously issued construction or operation permit, IDEM, OAM, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emissions Limitations [326 IAC 2-8-4(1)]

C.1 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. This limitation shall also satisfy the requirements of 326 IAC 2-3 (Emission Offset);

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

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

(b) Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), emissions of 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 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.2 Asphalt Manufacturing

Pursuant to 326 IAC 2-8-11, the source shall not manufacture cutback asphalt or asphalt emulsion unless the permittee applies for and obtains a permit modification.

C.3 Opacity

Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions shall meet the following, unless otherwise stated in this permit:

(a) Visible emissions shall not exceed an average of forty percent (40%) opacity in twenty-four (24) consecutive readings,

(b) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (60 readings) in a six (6) hour period.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:
(a) one (1) aggregate rotary dryer, with a maximum capacity of 225 tons per hour, equipped with one (1) No. 2 distillate fuel oil fired aggregate dryer burner with a maximum rated capacity of 33.12 million (MM) British thermal units (Btu) per hour, using one (1) cyclone and one (1) jet pulse baghouse for air pollution control, and exhausting at one (1) stack, identified as SV/1;
(b) one (1) enclosed mixing and batching tower with a maximum capacity of 225 tons per hour;
(c) one (1) cold aggregate feeder conveyor;
(d) one (1) recycled asphalt pavement (RAP) feeder conveyor; and
(e) one (1) surge silo, with a maximum hot mix asphalt storage capacity of 150 tons.

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

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

D.1.1 Particulate Matter [326 IAC 6-1-8.1(d)][326 IAC 6-3][40 CFR 60.90, Subpart I]

(a) Pursuant to 326 IAC 6-1-8.1(d), the particulate matter emissions from the mixing and drying operation shall be limited to 0.22 grains per dry standard cubic foot and to 19.10 tons particulate matter (PM) per year (equivalent to 4.36 pounds per hour). This limit will also satisfy the requirements of 326 IAC 6-3 (Process Operations) and 326 IAC 2-2 (Prevention of Significant Deterioration).

(b) Pursuant to 326 IAC 12, (40 CFR Part 60.90, Subpart I) "Standards of Performance for Hot Mix Asphalt Facilities", the particulate matter emissions from the mixing and drying operations shall be limited to 0.04 grains per dry standard cubic foot (gr/dscf). This is equivalent to a particulate matter emission rate of 7.75 pounds per hour.

Compliance with the PM emission limit pursuant to 326 IAC 6-1-8.1(d) will also satisfy the PM emission limit pursuant to 326 IAC 12, 40 CFR Part 60.90, Subpart I.

D.1.1a Opacity [326 IAC 12] [40 CFR 60.90, Subpart I]

Pursuant to 326 IAC 12, (40 CFR Part 60.92, Subpart I) "Standards of Performance for Hot Mix Asphalt Facilities", the mixing and drying operations shall not discharge or cause the discharge into the atmosphere any gases which exhibit 20% opacity or greater.

D.1.2 Particulate Matter 10 Microns (PM-10)

Pursuant to 326 IAC 2-8-4, particulate matter 10 microns emissions from the aggregate mixing and drying operation shall not exceed 18.65 pounds per hour, including both filterable and condensible fractions. Compliance with this limit will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) do not apply.

D.1.3 Sulfur Dioxide (SO_2)

Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the 33.12 million Btu per hour burner for the aggregate dryer shall be limited to 0.5 pounds per million Btu heat input or a sulfur content of less than or equal to 0.49% when using distillate oil.

Pursuant to 326 IAC 7-1.1-2, this sulfur dioxide limit applies at all times including periods of startup, shutdown, and malfunction.

D.1.4 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 this facility and any control devices.

Compliance Determination Requirements

D.1.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

Within 60 days after achieving the maximum production rate, but no later than 180 days after initial start-up of the new production capacity, the Permittee shall perform PM and PM-10 testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM-10, or other 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. PM-10 includes filterable and condensible PM-10. Testing shall be conducted in accordance with Section C- Performance Testing.

D.1.6 Sulfur Dioxide Emissions and Sulfur Content

The Permittee shall test for:

(a) Sulfur content of oil burned as fuel by the 33.12 million Btu per hour burner for the aggregate dryer using 40 CFR Part 60, Appendix A, Method 19 for each load of oil delivered; or

(b) Sulfur dioxide emissions from the 33.12 million Btu per hour burner for the aggregate dryer, using 40 CFR Part 60, Appendix A, Method 6 each time a test to comply with Condition D.1.4 is performed.

Sulfur content tests made by the oil supplier and an oil supplier certification can be used to replace the test.

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

D.1.7 Daily Visible Emission Notations

Daily visible emission notations of the conveyors, transfer points, aggregate storage piles, unpaved roads, the mixing and batching tower, and the drying operation stack exhaust, shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

D.1.8 Pressure Drop Readings

The Permittee shall take readings of the total static pressure drop across the baghouse controlling the drying operation, at least once a day when the drying process is in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 2.0 and 6.0 inches of water or a range established during the latest stack test. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with condition C.13 - Pressure Gauge Specifications, be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

D.1.9 Preventive Inspections

The following inspections shall be performed when the aggregate dryer is operating in accordance with the Preventive Maintenance Plan prepared pursuant to Condition B.13:
Daily:

1) Check baghouse air compressor for proper operation and air pressures
2) Check exhaust fan and screw conveyor drives for proper operation
3) Monitor pressure drop across filter
4) Check exhaust plume for visible emissions
5) Monitor inlet temperature to baghouse to prevent overheating of the bags
6) Pulse the bags clean at the end of the day
7) Allow screw conveyor to run to remove dust

Weekly:

1) Check compressed air system for leaks
2) Check duct work and baghouse housing for holes and air leaks

Monthly:

1) Check filter bags for leaks
2) Check screw conveyor hanger bearings for wear and proper operation
3) Check filter pulse system for proper operation

Yearly:

1) Check filter bags to determine useful life remaining in bags
2) Check baghouse structure and duct work for worn areas

D.1.10 Broken Bag or Failure Detection

That in the event that bag failure has been observed:

(a) The affected compartments will be shut down immediately until the units have been replaced.

(b) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

D.1.11 Fuel Oil Sampling and Analysis

Oil samples shall be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted. The Permittee shall analyze the oil sample to determine the sulfur content of the oil in accordance with 326 IAC 3-3-4. If a partially empty fuel tank is refilled, a new sample and analysis is required upon filling. Vendor analysis of the fuel oil is acceptable, in lieu of the above, if accompanied by a certification.

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

D.1.12 Operational Parameters

The Permittee shall maintain a daily record for the cyclone and baghouse controlling particulate matter emissions from the asphalt drying operation of the following values:

(a) Inlet and outlet differential static pressure;

(b) Visible observations;

(c) Checklist with dates and initials for each preventive action performed; and

(d) Records of corrective actions.

D.1.13 Distillate Fuel Oil Usage

(a) Complete and sufficient records shall be kept to establish compliance with the No. 2 fuel oil sulfur content limit established in this permit and contain a minimum of the following:

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

(2) Sulfur dioxide content of all fuel oils used;

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

(4) Fuel supplier certifications.

(b) The supplier certification shall contain, as a minimum, the following:

(1) The name of the oil supplier; and

(2) A statement from the oil supplier that certifies the sulfur content and heat content of the fuel oil.

D.1.14 Quarterly Reporting

A quarterly summary to document compliance with operation condition number D.1.3 shall be submitted, to the address listed in Section C.19 - General Reporting Requirements, using the enclosed forms or their equivalent, within thirty (30) days after the end of the quarter being reported.

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for a for a Permit Revision to a Federally Enforceable State Operating Permit

Source Background and Description

Source Name:	**Paul H. Rohe Company, Inc.**
Source Location:	**3919 East Laughery Creek Road, Aurora, Indiana 47001**
County:	**Dearborn**
SIC Code:	**2951**
Operation Permit No.:	**F 029-7416-03187**
Operation Permit Issuance Date:	**July 7, 1997**
Permit Revision No.:	**029-12072-03187**
Permit Reviewer:	**Trish Earls/EVP**

The Office of Air Management (OAM) has reviewed a revision application from Paul H. Rohe Company, Inc. relating to the modification of the existing stationary hot mix asphalt batch plant.

History

On March 22, 2000, Paul H. Rohe Company, Inc. submitted an application to the OAM requesting to add an additional 150 ton capacity surge silo to their existing plant which would allow the plant to run more consistently, which in turn will increase the capacity of the plant from 150 tons per hour to 225 tons per hour. Paul H. Rohe Company, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) (F029-7416-03187) on July 7, 1997 and a First Significant Modification (SMF 029-9881) on September 14, 1998.

Existing Approvals

The source was issued a FESOP (F029-7416-03187) on July 7, 1997. The source has since received the following:

(a) First Significant Modification No.: 029-9881, issued on September 14, 1998.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Significant Permit Revision 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 March 22, 2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (7 pages).

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential To Emit (tons/year)
PM	10,512.13
PM-10	1,478.32
SO_2	0.0
VOC	1.12
CO	0.0
NO_x	0.0

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

HAP's	Potential To Emit (tons/year)
Formaldehyde	1.05
Total Polycyclic Organic Matter	0.07
TOTAL	1.12

Note: These emissions represent emissions from an increase in plant throughput capacity from 150 tons per hour to 225 tons per hour.

(a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM10 from this modification are equal to or greater than 25 tons per year. Therefore, the FESOP is being revised through a Significant Permit Revision pursuant to 326 IAC 2-8-11.1.

Actual Emissions

No previous emission data has been received from the source.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
aggregate drying*	19.10	81.70	73.14	3.58	5.26	21.02	3.37
bin loading & conveying**	0.41	0.19	0.00	0.00	0.00	0.00	0.00
unpaved roads**	48.28	16.90	0.00	0.00	0.00	0.00	0.00
storage**	0.61	0.21	0.00	0.00	0.00	0.00	0.00
Total Emissions	68.4	99.0	73.14	3.58	5.26	21.02	3.37

* Includes combustion emissions from aggregate dryer burner.
** These are insignificant activities.

County Attainment Status

The source is located in Dearborn County.

Pollutant	Status
PM-10	attainment
SO_2	unclassifiable
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and NO_X emissions are considered when evaluating the rule applicability relating to the ozone standards. Dearborn County has been designated as attainment or unclassifiable for ozone.

Federal Rule Applicability

(a) This existing stationary hot mix asphalt source, constructed in 1968, is now subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.90 through 60.93, Subpart I) “Standards of Performance for Hot Mix Asphalt Facilities”, because the source has modified the source by adding a surge silo which stores hot mix asphalt. Since this an affected facility under this rule, the source is now subject to this rule. 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. This is equivalent to a particulate matter emission rate of 7.75 pounds per hour. The source will comply with this rule by using a baghouse to limit particulate matter emissions to less than 0.04 gr/dscf (see Appendix A, page 5 of 7, for detailed calculations).

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), which would require the source to submit an annual emission statement. Pursuant to this rule, any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable. This source has accepted federally enforceable operation conditions which limit emissions of particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM-10) to below 100 tons per year per pollutant. Therefore, the requirements of 326 IAC 2-6 do not apply.

326 IAC 2-8-4 (FESOP)

This source is subject to 326 IAC 2-8-4 (FESOP). Pursuant to this rule, the baghouse and cyclone controlling the aggregate dryer particulate emissions shall be in operation at all times when the aggregate dryer is in operation and total PM-10 emissions shall not exceed 81.7 tons per year (99 tons/yr - 17.3 tons/yr from other sources). Therefore, the requirements of 326 IAC 2-7 do not apply.

326 IAC 5-1 (Opacity Limitations)

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

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

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. Pursuant to 326 IAC 6-5, for any new source which has not received all the necessary preconstruction 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) Fugitive particulate matter (dust) emissions from paved roads, unpaved roads, and parking lots shall be controlled by one or more of the following measures:

Paved roads and parking lots:
(1) Power brooming while wet from either rain or application of water;
(2) Limiting travel from unpaved areas onto paved areas;
(3) Maintaining a good roadway surface (free of potholes).

Unpaved roads and parking lots:
(1) paving with asphalt when possible;
(2) treating with water on an as needed basis;
(3) minimizing traffic in the unpaved areas.

(b) Fugitive particulate matter (dust) emissions from material handling will be controlled by one or more of the following measures:

Paved roads and parking lots:
(1) Maintain vehicle bodies in a condition to prevent leaking;
(2) Maintain a 10 MPH speed limit in the yard.

Unpaved roads and parking lots:
(1) Handle aggregates in a moist condition;
(2) Apply water on an as needed basis;
(3) Minimize drop heights of aggregates.

State Rule Applicability - Individual Facilities

326 IAC 6-1-8.1 (Dearborn County Particulate Matter Emission Limitations)

The aggregate rotary dryer is subject to the requirements of 326 IAC 6-1-8.1(d) which limits particulate matter emissions from the rotary dryer to 0.22 grains per dry standard cubic foot (gr/dscf) and 19.10 tons per year. The 0.22 gr/dscf emission limit is equivalent to 186.64 tons per year (see Appendix A, page 5 of 7). The 19.10 tons per year emission limit is more stringent than the 0.22 gr/dscf emission limit, therefore the source will comply with the 19.10 tons per year emission limit. Since the rotary dryer has a baghouse for particulate matter control which controls PM emissions from the dryer to 7.57 tons per year, the dryer will comply with this rule.

326 IAC 6-3-2 (Process Operations)

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 not consistent with applicable limitations in 326 IAC 6-1 or 326 IAC 12. Since the applicable PM limit established by 326 IAC 6-1-8.1(d) is less than the PM limit that would be established by 326 IAC 6-3-2 (59.8 pounds per hour, see Appendix A, page 5 of 7), the more stringent limit applies and the limit pursuant to 326 IAC 6-3-2 does not apply.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The sulfur dioxide emissions from the 33.12 MMBtu/hr dryer burning distillate oil shall be limited to 0.5 pounds per MMBtu heat input. This equates to a fuel oil sulfur content limit of 0.49%. Therefore, the sulfur content of the fuel must be less than or equal to 0.49% in order to comply with this rule (See Appendix A, Page 5 of 7 for detailed calculations). The source will comply with this rule by using No. 2 distillate oil with a sulfur content of 0.49% or less.

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

This source is subject to 326 IAC 7-2-1 (Reporting Requirements). This rule requires the source to submit to the Office of Air Management 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 326 IAC 8-1-6, which applies to facilities which have potential VOC emissions of 25 tons or more per year. Potential VOC emissions from this source are less than 25 tons per year, therefore, 326 IAC 8-1-6 does not apply.

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

This source is not subject to 326 IAC 8-5-2, which prevents the use of cutback asphalt or asphalt emulsion containing more than seven percent (7%) oil distillate by volume of emulsion. This source does not use cutback asphalt or asphalt emulsion, therefore, 326 IAC 8-5-2 does not apply.

Compliance Requirements

Permits issued under 326 IAC 2-7are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

1. The conveying, material transfer points, unpaved roads, storage piles, mixing and batching tower, and drying operation have applicable compliance monitoring conditions as specified below:

    (a) Daily visible emissions notations of the conveying, material transfers, unpaved roads, storage piles, the mixing and batching tower, and the dryer stack shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

    (b) The Permittee shall record the total static pressure drop across the baghouse controlling the aggregate dryer, at least once daily when the aggregate dryer is in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 2.0 to 6.0 inches of water or a range established during the latest stack test. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of the above mentioned range for any one reading.

    These monitoring conditions are necessary because the baghouse for the aggregate dryer must operate properly to ensure compliance with 326 IAC 6-1-8.1(d) (Dearborn County Particulate Matter Emission Limitations), 326 IAC 6-3 (Process Operations) and 326 IAC 2-8 (FESOP). Additionally, fugitive dust emissions must comply with 326 IAC 6-4 and 326 IAC 6-5.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

(a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.

(b) See attached calculations for detailed air toxic calculations. (Appendix A, pages 6 and 7 of 7)

Changes Proposed

The following changes have been made to the Federally Enforceable State Operating Permit (F029-7416-03187) (additions are shown in bold, deletions are shown in strikeout):

1. Some additional language has been added to section A, some minor changes were made to section A.1 including adding the phone number of the source, and section A.2 has been revised to include the new surge silo. Rule citations have been added to the titles of sections A.1, A.2, and A.3. The rule cite for Insignificant Activities in section A.3 has been revised. The language in section A.5 has been changed also. The changes are as follows:

SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary hot mix asphalt batch plant.

~~Responsible Official:~~	
Authorized Individual:	Daniel T. Crago, Environmental and Quality Control Manager
Source Address:	3919 East Laughery Creek Road, Aurora, Indiana 47001
Mailing Address:	P.O. Box 67, Aurora, Indiana 47001
Phone Number:	**812-926-1471**
SIC Code:	2951
County Location:	Dearborn
County Status:	Attainment for all criteria pollutants
Source Status:	~~Minor Source, FESOP Program~~ **Federally Enforceable State Operating Permit (FESOP)** Minor Source, **under** PSD ~~Program~~ **Rules**; **Minor Source, Section 112 of the Clean Air Act**

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

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

(a) one (1) aggregate rotary dryer, with a maximum capacity of ~~150~~ **225** tons per hour, equipped with one (1) No. 2 distillate fuel oil fired aggregate dryer burner with a maximum rated capacity of 33.12 million (MM) British thermal units (Btu) per hour, using one (1) cyclone and one (1) jet pulse baghouse for air pollution control, and exhausting at one (1) stack, identified as SV/1;

(b) one (1) enclosed mixing and batching tower with a maximum capacity of ~~150~~ **225** tons per hour;

(c) one (1) cold aggregate feeder conveyor; ~~and~~

(d) one (1) recycled asphalt pavement (RAP) feeder conveyor**; and**

(e) one (1) surge silo, with a maximum hot mix asphalt storage capacity of 150 tons.

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

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(2~~0~~**1**):

(a) one (1) liquid asphalt storage tank, identified as Tank 1, with a maximum storage capacity of 20,000 gallons;

(b) one (1) liquid asphalt storage tank, identified as Tank 2, with a maximum storage capacity of 10,000 gallons;

(c) one (1) No. 2 distillate fuel oil storage tank, identified as Tank 3, with a maximum storage capacity of 12,000 gallons;

(d) one (1) No. 2 distillate fuel oil storage tank, identified as Tank 4, with a maximum storage capacity of 500 gallons;

(e) a gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons;

(f) cleaners and solvents having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20ºC (68ºF); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months; and

(g) paved and unpaved roads and parking lots with public access.

A.5 Prior Permit Conditions ~~Superseded [326 IAC 2]~~

~~This permit supersedes the conditions of all construction and operating permits issued under 326 IAC 2 prior to the effective date of this permit.~~

(a) This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, including any term or condition from a previously issued construction or operation permit, IDEM, OAM, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued.

2. Condition C.1 has been revised to reflect the current model language describing the FESOP limit. The condition now reads as follows:

C.1 Overall Source Limit [326 IAC 2-8]

~~Pursuant to 326 IAC 2-8, emissions of any regulated pollutant from the entire source shall not exceed ninety-nine (99) tons per three hundred sixty five (365) day period. Emissions of hazardous air pollutants (HAP) from the entire source shall not exceed nine (9) tons per three hundred sixty five (365) day period of any individual HAP or twenty-four (24) tons per three hundred sixty five (365) day period of any combination of HAPs. Emissions shall include those from all emission points at the source including those that are insignificant as defined in 326 IAC 2-7-1(20). The source shall be allowed to add insignificant activities not already listed in this permit, as long as the total emissions from the source do not exceed the above specified limits. Limits in Section D will be enforced independently.~~

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. This limitation shall also satisfy the requirements of 326 IAC 2-3 (Emission Offset);

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

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

(b) Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), emissions of 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 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.

3. The equipment description in Section D.1 has been revised to show the increased plant throughput and the addition of the new silo as follows:

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:
(a) one (1) aggregate rotary dryer, with a maximum capacity of ~~150~~ **225** tons per hour, equipped with one (1) No. 2 distillate fuel oil fired aggregate dryer burner with a maximum rated capacity of 33.12 million (MM) British thermal units (Btu) per hour, using one (1) cyclone and one (1) jet pulse baghouse for air pollution control, and exhausting at one (1) stack, identified as SV/1;
(b) one (1) enclosed mixing and batching tower with a maximum capacity of ~~150~~ **225** tons per hour;
(c) one (1) cold aggregate feeder conveyor; ~~and~~
(d) one (1) recycled asphalt pavement (RAP) feeder conveyor**; and**
(e) one (1) surge silo, with a maximum hot mix asphalt storage capacity of 150 tons.

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

4. Condition D.1.1 has been revised to include the PM emission limit pursuant to 40 CFR 60.90, Subpart I as follows:

D.1.1 Particulate Matter [326 IAC 6-1-8.1(d)][326 IAC 6-3]**[40 CFR 60.90, Subpart I]**

(a) Pursuant to 326 IAC 6-1-8.1(d), the particulate matter emissions from the mixing and drying operation shall be limited to 0.22 grains per dry standard cubic foot and to 19.10 tons particulate matter (PM) per year (equivalent to 4.36 pounds per hour). This limit will also satisfy the requirements of 326 IAC 6-3 (Process Operations) and 326 IAC 2-2 (Prevention of Significant Deterioration).

(b) Pursuant to 326 IAC 12, (40 CFR Part 60.90, Subpart I) "Standards of Performance for Hot Mix Asphalt Facilities", the particulate matter emissions from the mixing and drying operations shall be limited to 0.04 grains per dry standard cubic foot (gr/dscf). This is equivalent to a particulate matter emission rate of 7.75 pounds per hour.

Compliance with the PM emission limit pursuant to 326 IAC 6-1-8.1(d) will also satisfy the PM emission limit pursuant to 326 IAC 12, 40 CFR Part 60.90, Subpart I.

5. A new condition has been added to the FESOP to include the opacity limit pursuant to 40 CFR 60.90, Subpart I. This condition has been numbered as D.1.1a and reads as follows:

D.1.1a Opacity [326 IAC 12] [40 CFR 60.90, Subpart I]

Pursuant to 326 IAC 12, (40 CFR Part 60.92, Subpart I) "Standards of Performance for Hot Mix Asphalt Facilities", the mixing and drying operations shall not discharge or cause the discharge into the atmosphere any gases which exhibit 20% opacity or greater.

6. The former condition D.1.1a (added in the First Permit Revision No. 029-9881, issued September 14, 1998) has been removed from the FESOP because a limit is no longer needed on throughput since the dryer maximum capacity is now 225 tons per hour. The quarterly report form associated with this limit that was added in the First Permit Revision noted above as page 30a is also removed from the FESOP.

~~D.1.1a Hot Mix Asphalt Production Limit~~

~~The one (1) aggregate rotary dryer shall be limited to 150 tons per hour. The Permittee shall record the hours of plant operation per day and the total asphalt production per day. The average production per hour for each day shall not exceed 150 tons per hour.~~

7. Condition D.1.2 has been revised to incorporate the change in the allowable PM-10 emission rate due to the increase in plant throughput as follows:

D.1.2 Particulate Matter 10 Microns (PM-10)

Pursuant to 326 IAC 2-8-4, particulate matter 10 microns emissions from the aggregate mixing and drying operation shall not exceed ~~20.6~~ **18.65** pounds per hour, including both filterable and condensible fractions. Compliance with this limit will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) do not apply.

8. The Preventive Maintenance Plan requirement in condition D.1.8 of the original FESOP has been moved to the Emission Limitations and Standard section of D.1 and is now condition D.1.4. The condition now reads as follows:

D.1.~~8~~**4** Preventive Maintenance **Plan** [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with ~~Condition B.13~~ **Section B - Preventive Maintenance Plan**, of this permit, is required for this ~~source~~ **facility and any control devices**.

9. Condition D.1.4 (now re-numbered D.1.5) has been revised to include some additional rule cites and to change the title of the condition and to clarify that testing should be done in accordance with Section C- Performance Testing. Testing will again be required within 180 days after initial start-up of the new production capacity. The condition now reads as follows:

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

Within 60 days after achieving the maximum production rate, but no later than 180 days after initial start-up of the new production capacity, the Permittee shall perform PM and PM-10 testing utilizing Methods 5 or 17 ~~per~~ **(**40 CFR 60, Appendix A**) for PM** and Methods 201 or 201A and 202 ~~per~~ **(**40 CFR 51, Appendix M**) for PM-10**, or **other 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. PM-10 includes filterable and condensible PM-10. ~~In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.~~ **Testing shall be conducted in accordance with Section C- Performance Testing.**

Conclusion

The operation of this stationary hot mix asphalt batch plant shall be subject to the conditions of the attached proposed **Significant Permit Revision to a FESOP No. 029-12072-03187**.

Appendix A: Emission Calculations Operation Permit No.- SPR 029-12072 Plant I D 029-03187

Company Name:	Paul H. Rohe Company, Inc.
Plant Location:	3919 E. Laughery Creek Road, Aurora, Indiana 47001
County:	Dearborn
Date Received:	March 22, 2000
Permit Reviewer:	Trish Earls

**** aggregate dryer burner****

The following calculations determine the amount of emissions created by the combustion of #2 distillate fuel oil @ 0.49 % sulfur, from the aggregate dryer burner, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-2, 1.3-4, and 1.3-7.

Criteria Pollutant:

33.12 MMBtu/hr * 8,760 hr/yr * Ef (lb/1,000 gal) = (ton/yr)
138,000 Btu/gal * 2,000 lb/ton

P M:	2.0	lb/1000 gal =	**2.10 ton/yr**
P M-10:	1.0	lb/1000 gal =	**1.05 ton/yr**
S O 2:	69.6	lb/1000 gal =	**73.14 ton/yr**
N O x:	20.0	lb/1000 gal =	**21.02 ton/yr**
V O C:	0.20	lb/1000 gal =	**0.21 ton/yr**
C O:	5.0	lb/1000 gal =	**5.26 ton/yr**

*** * aggregate drying: batch-mix plant * ***

The following calculations determine the amount of worst case emissions created by aggregate drying before controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Tables 11.1-2 and 11.1-9 for an oil fired batch mix dryer:

Pollutant: Ef lb/ton x 225 ton/hr x 8,760 hr/yr
2,000 lb/ton

Criteria Pollutant:

P M:	32	lb/ton =	**31536.0 ton/yr**
P M-10:	4.5	lb/ton =	**4,434.75 ton/yr**
VOC:	0.003421	lb/ton =	**3.37 ton/yr**

The VOC emission factor represents the sum of the HAP emission factors from the dryer which were assumed to be VOC.

*** * conveying / handling * ***

The following calculations determine the amount of emissions created by wet (>1.5% moisture) material handling, based on 8,760 hours of use and AP-42, Section 11.19.2, Table 11.19.2-2. Emission factors for process operations are as follows:

PM-10 Emissions Per Operation:

225 ton/hr * 8,760 hrs/yr * Ef (lb/ton of material) * Number of Similar Operations = (ton/yr)
2,000 lb/ton

Operation					
Truck Loading:	1	operation(s) x	1.0E-04	lb/ton of material =	0.10 ton/yr
Conveyor Transfers:	2	operation(s) x	4.8E-05	lb/ton of material =	0.09 ton/yr

Total PM 10 Emissions: 0.19 ton/yr
Total PM Emissions: 0.41 ton/yr

Total PM Emissions (tons/yr) = 2.1 * Total PM-10 Emissions (tons/yr) based on US EPA's AP-42, 5th Edition, Section 11.19.2, Table 11.19.2-2, footnote c.

*** * unpaved roads * ***

The following calculations determine the amount of emissions created by vehicle traffic on unpaved roads, based on 8,760 hours of use and AP-42, Ch 11.2.1.

I. Tandem Axle Trucks

8.5	trip/hr x		
0.13	mile/trip x		
2	(round trip) x		
8,760	hr/yr =	19359.6	miles per year

Ef =	k*5.9*(s/12)*(S/30)*(W/3)^0.7*(w/4)^0.5*((365-p)/365)		
=	3.44	lb/mile	
where k =	0.8	size multiplier)	
s =	4.8	% silt content of unpaved roads	
p =	125	days of rain greater than or equal to 0.01 inches	
S =	15	miles/hr vehicle speed	
W =	18	tons average vehicle weight	
w =	10	wheels	

PM:	3.44	lb/mi x	19359.6	mi/yr =	33.30	tons/yr
	2000	lb/ton				
P M-10:	35%	of PM =			11.65	tons/yr

II. Front End Loader

17.1	trip/hr x		
0.05	mile/trip x		
2	(round trip) x		
8,760	hr/yr =	14979.6	miles per year

Ef =	k*5.9*(s/12)*(S/30)*(W/3)^0.7*(w/4)^0.5*((365-p)/365)		
=	2.00	lb/mile	
where k =	0.8	size multiplier)	
s =	4.8	% silt content of unpaved roads	
p =	125	days of rain greater than or equal to 0.01 inches	
S =	10	miles/hr vehicle speed	
W =	29	tons average vehicle weight	
w =	4	wheels	

PM:	2.00	lb/mi x	14979.6	mi/yr =	14.99	tons/yr
	2000	lb/ton				
P M-10:	35%	of PM =			5.24	tons/yr

Total PM Emissions From Unpaved Roads = 48.28 tons/yr

Total PM-10 Emissions From Unpaved Roads = 16.90 tons/yr

*** * storage * ***

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.

Material	Silt Content (wt %)	Pile Size (acres)	Storage Capacity (tons)	P M Emissions tons/yr	P M-10 Emissions tons/yr
Sand	1.1	0.90	20,000	0.21	0.07
Gravel	0.8	0.90	20,000	0.15	0.05
RAP	1.3	0.90	20,000	0.25	0.09
Total				**0.61**	**0.21**

Sample Calculation:

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
= 1.27 lb/acre/day
where s = 1.1 % silt
p = 125 days of rain greater than or equal to 0.01 inches
f = 15 % of wind greater than or equal to 12 mph

Ep (storage) = $\frac{\text{Ef} * (365 \text{ day/yr}) * (\text{pile size in acres})}{(2{,}000 \text{ lb/ton})}$

PM = 0.21 tons/yr **P M-10:** 35% of PM = **0.07 tons/yr**

*** * summary of source emissions before controls * ***

Criteria Pollutants:

P M:	**31,587.40 ton/yr**	
P M-10:	**4,453.11 ton/yr**	
S O 2:	**73.14 ton/yr**	
N O x:	**21.02 ton/yr**	
V O C:	**3.58 ton/yr**	(VOCs include HAPs from aggregate drying operation)
C O:	**5.26 ton/yr**	

*** * source emissions after controls * ***

Particulate emissions from the aggregate drying operation are controlled by a cyclone and baghouse with a control efficiency of 99.976 %

	aggregate drying:		nonfugitive			
P M:	31,538.10	ton/yr x	0.024%	emitted after controls =	**7.57**	**ton/yr**
P M-10:	4,435.80	ton/yr x	0.024%	emitted after controls =	**1.06**	**ton/yr**
	bin loading & conveying:		fugitive			
P M:	0.41	ton/yr x	50%	emitted after controls =	**0.20**	**ton/yr**
P M-10:	0.19	ton/yr x	50%	emitted after controls =	**0.10**	**ton/yr**
	unpaved roads:		fugitive			
P M:	48.28	ton/yr x	50%	emitted after controls =	**24.14**	**ton/yr**
P M-10:	16.90	ton/yr x	50%	emitted after controls =	**8.45**	**ton/yr**
	storage piles:		fugitive			
P M:	0.61	ton/yr x	50%	emitted after controls =	**0.30**	**ton/yr**
P M-10:	0.21	ton/yr x	50%	emitted after controls =	**0.11**	**ton/yr**

*** * summary of source emissions after controls * ***

Criteria Pollutant:	**Non-Fugitive**	**Fugitive**	**Total**
P M:	**7.57 ton/yr**	**24.65 ton/yr**	**32.22 ton/yr**
P M-10:	**1.06 ton/yr**	**8.65 ton/yr**	**9.72 ton/yr**
S O 2:	**73.14 ton/yr**	**0.00 ton/yr**	**73.14 ton/yr**
N O x:	**21.02 ton/yr**	**0.00 ton/yr**	**21.02 ton/yr**
V O C:	**3.58 ton/yr**	**0.00 ton/yr**	**3.58 ton/yr**
C O:	**5.26 ton/yr**	**0.00 ton/yr**	**5.26 ton/yr**

*** * miscellaneous * ***

326 IAC 7 Compliance Calculations:

The following calculations determine the maximum sulfur content of distillate fuel oil allowable by 326 IAC 7:

0.5 lb/MMBtu x 138,000 Btu/gal= 69 lb/1000gal

69 lb/1000gal / 142 lb/1000 gal = 0.49 %

Sulfur content must be less than or equal to 0.49% to comply with 326 IAC 7.

326 IAC 6-3-2 Compliance Calculations:

The following calculations determine compliance with 326 IAC 6-3-2 for process weight rates in excess of 30 tons per hour:

limit = 55 * (225 ^ 0.11) - 40 = 59.79 lb/hr or
261.90 ton/yr

PM emissions from the aggregate dryer are controlled to 4.04 tons/yr < 232.69 tons/yr (Will comply)

Since the PM emission limit established by 326 IAC 6-1-8.1(d) is more stringent, compliance with the limit pursuant to 326 IAC 6-1-8.1 will satisfy the requirements of 326 IAC 6-3-2.

PM-10 Emission Limit:

(99.0 tons PM-10/yr - 17.3 tons PM-10/yr from other souces)
= 81.7 tons PM-10/yr = 18.65 lbs/hr
PM-10 emissions from the aggregate dryer are controlled to 1.06 tons/yr < 81.7 tons/yr (Will comply)

40 CFR Part 60.90, Subpart I (Standards of Performance for Hot Mix Asphalt Plants) Compliance Calculations:

The following calculations determine compliance with the NSPS, which limits stack emissions from asphalt plants to 0.04 gr/dscf:

7.57 ton/yr * 2000 lb/ton * 7000 gr/lb = 0.009 gr/dscf (will comply)
525,600 min/yr * 22,597 dscf/min

Allowable particulate emissions under NSPS equate to 33.93 tons per year. 7.75 lbs/hr

Note:
SCFM = 32,326 acfm * (460 + 68)*(1-0.06) / (460 + 250)
= 22,597 scfm

Assumes exhaust gas temperature of 250F, exhaust gas moisture content of 6% and exhaust gas flow of 32,326 acfm.

326 IAC 6-1-8.1(d) (Dearborn County Particulate Matter Emission Limitations)

The following calculations determine compliance with 326 IAC 6-1-8.1(d), which limits stack emissions from asphalt plants to 0.22 gr/dscf and 19.10 tons per year.

7.57 ton/yr * 2000 lb/ton * 7000 gr/lb = 0.009 gr/dscf (will comply)
525,600 min/yr * 22,597 dscf/min

Allowable particulate emissions under 326 IAC 6-1-8.1(d) equate to 186.64 tons per year.

Since 19.10 tons per year is more stringent than the 0.22 gr/dscf limit and the 0.04 gr/dscf limit pursuant to Subpart I, the source shall comply with the 19.10 tons per year emission limit. This is equivalent to 4.36 pounds per hour.

PM emissions from the aggregate dryer are controlled to 7.57 tons per year < 19.10 tons per year (will comply)

Note:
SCFM = 32,326 acfm * (460 + 68)*(1-0.06) / (460 + 250)
= 22,597 scfm

Assumes exhaust gas temperature of 250F, exhaust gas moisture content of 6% and exhaust gas flow of 32,326 acfm.

Hazardous Air Pollutants (HAPs)

**** aggregate dryer burner****

The following calculations determine the amount of HAP emissions created by the combustion of distillate fuel oil before & after controls @ 0.49 % sulfur, from the aggregate dryer burner, based on 8760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Table 1.3-11.

Hazardous Air Pollutants (HAPs): 33.12 MMBtu/hr * 8760 hr/yr / 2,000 lb/ton * Ef (lb/10^12 Btu) = (ton/yr)

			Potential To Emit	Limited Emissions
Arsenic	4.2	lb/10^12 Btu =	6.09E-04 ton/yr	1.46E-07 ton/yr
Beryllium:	2.5	lb/10^12 Btu =	3.63E-04 ton/yr	8.70E-08 ton/yr
Cadmium:	11	lb/10^12 Btu =	1.60E-03 ton/yr	3.83E-07 ton/yr
Chromium:	67	lb/10^12 Btu =	9.72E-03 ton/yr	2.33E-06 ton/yr
Lead:	8.9	lb/10^12 Btu =	1.29E-03 ton/yr	3.10E-07 ton/yr
Manganese:	14	lb/10^12 Btu =	2.03E-03 ton/yr	4.87E-07 ton/yr
Mercury:	3	lb/10^12 Btu =	4.35E-04 ton/yr	1.04E-07 ton/yr
Nickel:	170	lb/10^12 Btu =	2.47E-02 ton/yr	5.92E-06 ton/yr
		Total HAPs =	4.07E-02 ton/yr	9.77E-06 ton/yr

*** * aggregate drying: batch-mix plant * ***

The following calculations determine the amount of HAP emissions created by aggregate drying before & after controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Table 11.1-9 for a fuel oil fired batch mix dryer. The HAP emission factors are for an oil fired dryer.

Pollutant: Ef lb/ton x 225 ton/hr x 8760 hr/yr / 2000 lb/ton

Hazardous Air Pollutants (HAPs):			Potential To Emit	Limited Emissions
Formaldehyde:	3.20E-03	lb/ton =	3.15 ton/yr	3.15 ton/yr
****Total Polycyclic Organic Matter (POM):**	2.210E-04	lb/ton =	0.22 ton/yr	0.22 ton/yr
		Total HAPs =	3.37 ton/yr	3.37 ton/yr

** total POM includes 2-Methylnapthalene, Fluoranthene, Naphthalene, Phenanthrene, and Pyrene.

*** * summary of source HAP emissions potential to emit * ***

Hazardous Air Pollutants (HAPs):

Arsenic:	**0.001**	ton/yr
Beryllium:	**0.000**	ton/yr
Cadmium:	**0.002**	ton/yr
Chromium:	**0.010**	ton/yr
Formaldehyde:	**3.154**	ton/yr
Lead:	**0.001**	ton/yr
Manganese:	**0.002**	ton/yr
Mercury:	**0.000**	ton/yr
Nickel:	**0.025**	ton/yr
Total POM:	**0.218**	ton/yr
Total:	**3.412**	**ton/yr**

*** * summary of source HAP limited emissions * ***

Hazardous Air Pollutants (HAPs):

Arsenic:	**0.000**	ton/yr
Beryllium:	**0.000**	ton/yr
Cadmium:	**0.000**	ton/yr
Chromium:	**0.000**	ton/yr
Formaldehyde:	**3.154**	ton/yr
Lead:	**0.000**	ton/yr
Manganese:	**0.000**	ton/yr
Mercury:	**0.000**	ton/yr
Nickel:	**0.000**	ton/yr
Total Polycyclic Organic Matter:	**0.218**	ton/yr
Total:	**3.371**	**ton/yr**