



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: March 5, 2009

RE: The Andersons Inc. Dunkirk Operations / 075-26994-00006

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



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Minor Source Operating Permit Renewal OFFICE OF AIR QUALITY

The Andersons Inc. Dunkirk Operations
4678 S. 1100 W
Dunkirk, Indiana 47336

(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 to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

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 MSOP under 326 IAC 2-6.1.

Operation Permit No.: M075-26994-00006	
Issued by:  Alfred C. Dumauval, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: March 5, 2009 Expiration Date: March 5, 2019

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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 and A.2 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 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

The Permittee owns and operates a grain handling and storage facility.

Source Address:	4678 S. 1100 W, Dunkirk, Indiana 47336
Mailing Address:	P.O.Box 119, Maumee, Ohio 43537
General Source Phone Number:	419-891-2915
SIC Code:	5153
County Location:	Jay
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) grain receiving area enclosed on 3 sides, receiving a maximum of 18 million bushels of grain per year, using a cyclone, identified as RV7 as a control, all constructed in 1969, and consisting of the following:
 - (i) Conveyors #8 and #9, using a cyclone, identified as DC6, as a control, and exhausting through duct system DC6.
 - (ii) Truck dump pits #1 and #2, exhausting through the duct systems DC8 and DC9.
 - (iii) Twenty nine (29) storage bins storing a maximum of 5.2 million bushels of grain.
- (b) Internal handling system, with double the maximum capacity of grain receiving, with a maximum capacity of 36 million bushels of grain per year, using a cyclone, identified as RV7, as a control, constructed in 1969, and consisting of the following:
 - (i) North basement conveyor # 1, constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control, and exhausting through duct system DC5.
 - (ii) South storage basement belt conveyors #2 and #3, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC2.
 - (iii) Truck dump conveyor # 5, using a cyclone, identified as RV3 as a control, all constructed in 1969, and exhausting through duct system DC3.

- (iv) Receiving legs East and West, and Shipping legs East and West, all constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control and exhausting through duct system DC12.
 - (v) Diverters and receiving legs, conveyor #4, #6, #8, and #9, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC10.
 - (vi) Grain dryer legs and headhouse bins, identified as H2, H5, H8, H11, and H13, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC1.
 - (vii) Conveyors #10 and #11, using a baghouse, identified as RV11, as a control, all constructed in 1975, and exhausting through duct system DC11.
- (c) One (1) natural gas fired column grain dryer, identified as Zimmerman AP-4500, rated at 45.46 million British thermal units (MMBtu) per hour, with a maximum capacity of 4,500 bushels per hour, and constructed in 1993.
- (d) One (1) grain shipping area, with a maximum capacity of 15 million bushels of grain per year and consisting of the following:
- (i) Shipping belt conveyor #7, rail shipping bins, distributors, one (1) rail loading, all constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control, connected with a 30 hp fan and duct work, and exhausting through duct system DC4.
 - (ii) One (1) scale load-out system under grain shipping area, constructed in 1969, using a baghouse, constructed in 2003, identified as DC4, as a control.
 - (iii) Six (6) truck loading spouts, constructed in 1969.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

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 2-1.1-1) shall prevail.

B.2 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

- (a) This permit, M075-26994-00006, 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

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

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

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information

- (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

- (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 Notification [326 IAC 2-6.1-5(a)(5)]

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) The annual notice shall be submitted in the format attached no later than March 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
- (c) The notification 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.

B.10 Preventive Maintenance Plan [326 IAC 1-6-3]

- (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. 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.11 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to M075-26994-00006 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.12 Termination of Right to Operate [326 IAC 2-6.1-7(a)]

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 one hundred twenty (120) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

B.13 Permit Renewal [326 IAC 2-6.1-7]

- (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 2-6.1-7. Such information shall be included in the application for each emission unit at this source. 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 one hundred twenty (120) days 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 2-6.1 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.14 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 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 shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.15 Source Modification Requirement

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

B.16 Inspection and Entry

[326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][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 permitted 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.17 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 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 notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

B.18 Annual Fee Payment [326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees due within thirty (30) calendar days of receipt of a bill from IDEM, OAQ.
- (b) 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.19 Credible Evidence [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 2-6.1-5(a)(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 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

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:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

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

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

The Permittee shall not operate an incinerator 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 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

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. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-6.1-5(a)(2)]

C.8 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

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.9 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 2-6.1-5(a)(2)]

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

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.11 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.12 Instrument Specifications [326 IAC 2-1.1-11]

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

Corrective Actions and Response Steps

C.13 Response to Excursions or Exceedances

- (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.14 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (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 2-6.1-5(a)(2)]

C.15 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.16 General Record Keeping Requirements [326 IAC 2-6.1-5]

- (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.17 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) 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
- (b) 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.
- (c) 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).
- (d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) grain receiving area enclosed on 3 sides, receiving a maximum of 18 million bushels of grain per year, using a cyclone, identified as RV7 as a control, all constructed in 1969, and consisting of the following:
 - (i) Conveyors #8 and #9, using a cyclone, identified as DC6, as a control, and exhausting through duct system DC6.
 - (ii) Truck dump pits #1 and #2, exhausting through the duct systems DC8 and DC9.
 - (iii) Twenty nine (29) storage bins storing a maximum of 5.2 million bushels of grain.

- (b) Internal handling system, with double the maximum capacity of grain receiving, with a maximum capacity of 36 million bushels of grain per year, using a cyclone, identified as RV7, as a control, constructed in 1969, and consisting of the following:
 - (i) North basement conveyor # 1, constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control, and exhausting through duct system DC5.
 - (ii) South storage basement belt conveyors #2 and #3, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC2.
 - (iii) Truck dump conveyor # 5, using a cyclone, identified as RV3 as a control, all constructed in 1969, and exhausting through duct system DC3.
 - (iv) Receiving legs East and West, and Shipping legs East and West, all constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control and exhausting through duct system DC12.
 - (v) Diverters and receiving legs, conveyor #4, #6, #8, and #9, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC10.
 - (vi) Grain dryer legs and headhouse bins, identified as H2, H5, H8, H11, and H13, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC1.
 - (vii) Conveyors #10 and #11, using a baghouse, identified as RV11, as a control, all constructed in 1975, and exhausting through duct system DC11.

- (c) One (1) natural gas fired column grain dryer, identified as Zimmerman AP-4500, rated at 45.46 million British thermal units (MMBtu) per hour, with a maximum capacity of 4,500 bushels per hour, and constructed in 1993.
 - (d) One (1) grain shipping area, with a maximum capacity of 15 million bushels of grain per year and consisting of the following:
 - (i) Shipping belt conveyor #7, rail shipping bins, distributors, one (1) rail loading, all constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control, connected with a 30 hp fan and duct work, and exhausting through duct system DC4.
 - (ii) One (1) scale load-out system under grain shipping area, constructed in 1969, using a baghouse, constructed in 2003, identified as DC4, as a control.
 - (iii) Six (6) truck loading spouts, constructed in 1969.
- (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 2-6.1-5(a)(1)]

D.1.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from each process shall be limited by the following:

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

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

Operation	Maximum Process Weight Rate (tons/hr)	326 IAC 6-3 Limit (lbs/hr)
Grain Receiving	59.59	46.22
Grain Internal Handling	119.18	53.06
Grain Drying	126.0	53.62
Grain Shipping	51.37	44.82
Grain Cleaning	59.59	46.22
Grain Storage	59.59	46.22

D.1.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control devices.

Compliance Determination Requirements

D.1.3 Particulate Control

- (a) In order to comply with condition D.1.1, the baghouses and cyclones for particulate control shall be in operation and control emissions from the grain receiving, internal handling, grain dryer, grain shipping, grain cleaning, and grain storage facilities at all times that the grain receiving, internal handling, grain dryer, grain shipping, grain cleaning, grain storage facilities are 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.

Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]

D.1.4 Visible Emissions Notations

- (a) Visible emission notations of the grain receiving, internal handling, grain dryer, and grain shipping facilities duct system exhausts (DC3, DC6, DC8, and DC9) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps 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.1.5 Parametric Monitoring

- (a) The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the grain receiving, internal handling, grain drying and grain shipping facilities, at least once per day when the grain receiving, internal handling, grain drying and grain shipping facilities is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 6.0 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.

- (b) 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.1.6 Broken or Failed Bag Detection

- (a) For a single compartment baghouse 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.
- (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 line.

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.

D.1.7 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line.

Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]

D.1.8 Record Keeping Requirement

- (a) To document compliance with Condition D.1.4, the Permittee shall maintain daily records of the visible emission notations from the duct system exhausts DC3, DC6, DC8, and DC9. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation, (i.e. the process did not operate that day).
- (b) To document compliance with Condition D.1.5, the Permittee shall maintain records once per day of the pressure drop across each baghouse. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY

MINOR SOURCE OPERATING PERMIT (MSOP) CERTIFICATION

Source Name: The Andersons Inc. Dunkirk Operations
Source Address: 4678 S. 1100 W, Dunkirk, Indiana 47336
Mailing Address: P.O.Box 119, Maumee, Ohio 43537
MSOP No.: M075-26994-00006

**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**

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	The Andersons Inc. Dunkirk Operations
Address:	4678 S. 1100 W
City:	Dunkirk, Indiana 47336
Phone #:	419-891-2915
MSOP #:	M075-26994-00006

I hereby certify that The Andersons Inc. Dunkirk Operation still in operation.
is :

no longer in operation.

I hereby certify that The Andersons Inc. Dunkirk Operation in compliance with the requirements of
is : MSOP M075-26994-00006.

not in compliance with the requirements of
MSOP M075-26994-00006.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY FAX NUMBER - (317) 233-6865

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?____, 25 TONS/YEAR SULFUR DIOXIDE ?____, 25 TONS/YEAR NITROGEN OXIDES?____, 25 TONS/YEAR VOC ?____, 25 TONS/YEAR HYDROGEN SULFIDE ?____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?____, 25 TONS/YEAR FLUORIDES ?____, 100 TONS/YEAR CARBON MONOXIDE ?____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF "MALFUNCTION" AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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

Addendum to the Technical Support Document (ATSD) for a
Minor Source Operating Permit Renewal

Source Background and Description

Source Name:	The Andersons Inc. Dunkirk Operations
Source Location:	4678 S. 1100 W Dunkirk, Indiana 47336
County:	Jay
SIC Code:	5153
Operation Permit No.:	M075-26994-00006
Permit Reviewer:	Sarah Conner, Ph. D.

On January 29, 2009, the Office of Air Quality (OAQ) had a notice published in the Commercial Review, Portland, Indiana, stating that The Andersons Inc. Dunkirk Operations had applied for a renewal of their Minor Source Operating Permit (MSOP). The notice also stated that the OAQ proposed to issue a MSOP Renewal for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

No comments were received during the public notice period.

Additional Changes

IDEM, OAQ has decided to make revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

- (a) Several of IDEM's Branches and sections have been renamed. Therefore, IDEM has updated the addresses listed in the permit. References to Permit Administration and Development Section and the Permits Branch have been changed to Permit Administration and Support Section. References to Asbestos Section, Compliance Data Section, Air Compliance Section, and Compliance Branch have been changed to Compliance and Enforcement Branch.

**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**

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

IDEM Contact

- (a) Questions regarding this proposed MSOP Renewal can be directed to Sarah Conner, Ph. D. 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) 234-6555 or toll free at 1-800-451-6027 extension 4-6555.

- (b) A copy of the permit 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

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating Permit Renewal

Source Background and Description

Source Name:	The Andersons Inc. Dunkirk Operations
Source Location:	4678 S. 1100 W., Dunkirk, Indiana 47336-8992
County:	Jay
SIC Code:	5153
Permit Renewal No.:	M075-26994-00006
Permit Reviewer:	Sarah Conner, Ph. D.

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from The Andersons Inc. Dunkirk Operations relating to the operation of a grain handling and storage facility.

History

On September 16, 2008, The Andersons Inc. Dunkirk Operations submitted an application to the OAQ requesting to renew its operating permit. The Andersons Inc. Dunkirk Operations was issued an initial MSOP M075-17903-00006 on December 15, 2003.

Permitted Emission Units and Pollution Control Equipment

- (a) One (1) grain receiving area enclosed on 3 sides, receiving a maximum of 18 million bushels of grain per year, using a cyclone, identified as RV7 as a control, all constructed in 1969, and consisting of the following:
 - (i) Conveyors #8 and #9, using a cyclone, identified as DC6, as a control, and exhausting through duct system DC6.
 - (ii) Truck dump pits #1 and #2, exhausting through the duct systems DC8 and DC9.
 - (iii) Twenty nine (29) storage bins storing a maximum of 5.2 million bushels of grain.

- (b) Internal handling system, with double the maximum capacity of grain receiving, with a maximum capacity of 36 million bushels of grain per year, using a cyclone, identified as RV7, as a control, constructed in 1969, and consisting of the following:
 - (i) North basement conveyor # 1, constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control, and exhausting through duct system DC5.
 - (ii) South storage basement belt conveyors #2 and #3, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC2.
 - (iii) Truck dump conveyor # 5, using a cyclone, identified as RV3 as a control, all constructed in 1969, and exhausting through duct system DC3.

- (iv) Receiving legs East and West, and Shipping legs East and West, all constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control and exhausting through duct system DC12.
 - (v) Diverters and receiving legs, conveyor #4, #6, #8, and #9, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC10.
 - (vi) Grain dryer legs and headhouse bins, identified as H2, H5, H8, H11, and H13, using a baghouse, identified as RV2, as a control, all constructed in 1969, and exhausting through duct system DC1.
 - (vii) Conveyors #10 and #11, using a baghouse, identified as RV11, as a control, all constructed in 1975, and exhausting through duct system DC11.
- (c) One (1) natural gas fired column grain dryer, identified as Zimmerman AP-4500, rated at 45.46 million British thermal units (MMBtu) per hour, with a maximum capacity of 4,500 bushels per hour, and constructed in 1993.
- (d) One (1) grain shipping area, with a maximum capacity of 15 million bushels of grain per year and consisting of the following:
- (i) Shipping belt conveyor #7, rail shipping bins, distributors, one (1) rail loading, all constructed in 1969, using a baghouse, constructed in 1999, identified as RV4, as a control, connected with a 30 hp fan and duct work, and exhausting through duct system DC4.
 - (ii) One (1) scale load-out system under grain shipping area, constructed in 1969, using a baghouse, constructed in 2003, identified as DC4, as a control.
 - (iii) Six (6) truck loading spouts, constructed in 1969.

Existing Approvals

The source has been operating under MSOP 075-17903-00006 since its issuance on December 15, 2003. Compliance monitoring conditions have changed since the issuance of permit M075-17903-00006. Baghouse Inspections are longer required and have been removed from this renewal.

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

- (a) IDEM is aware that the application for an MSOP renewal was submitted late and is in violation according to 326 IAC 2-6.1-7(b).
- (b) IDEM is reviewing this matter and will take appropriate action.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Jay County

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

(a) Ozone Standards

- (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 (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Jay County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5

Jay County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15th, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.

(c) Other Criteria Pollutants

Jay 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.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Pollutant	tons/year
PM	224.78
PM ₁₀	66.03
PM _{2.5}	16.07
SO ₂	5.67
VOC	1.10
CO	16.73
NO _x	19.91

HAPs	tons/year
Hexane	0.36
Formaldehyde	0.015
All other single HAPs	negligable
Total	0.38

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all criteria pollutants is less than 100 tons per year. The source is not subject to the provisions of 326 IAC 2-7. Therefore, the source will be issued an MSOP.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year.

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-7, fugitive emissions are not counted toward the determination of Part 70 applicability.

Federal Rule Applicability

The following federal rules are applicable to the source:

- (a) The column grain dryer is subject to the the New Source Performance Standard for (Standards of Performance for Grain Elevators) 40 CFR Part 60.300, Subpart DD, which is incorporated by reference as 326 IAC 12, because it is an affected facility (grain dryer) at a grain terminal elevator that has a permanent storage capacity greater than 2.5 million bushels and was constructed after August 3, 1978. However, none of the provisions of this rule are applicable, per 40 CFR Part 60.302(a), because the grain dryer does not have a column plate perforation exceeding 0.094 inches; therefore, the column grain dryer is not subject to the requirements of the New Source Performance Standard for Grain Elevators, 40 CFR 60.300, Subpart DD.
- (b) The requirements of the New Source Performance Standard for (Standards of Performance for Grain Elevators), 40 CFR 60.300, Subpart DD, are not included in this permit for the grain receiving emission units, internal handling emission units or the grain shipping emission units. Construction of all these units commenced prior to August 3rd, 1978. Baghouse RV4 was added in 1999 to control emissions from the North basement

conveyor # 1, Receiving legs East and West, Shipping legs East and West Shipping, belt conveyor #7, rail shipping bins, distributors, and one (1) rail loading. Baghouse DC4 was added in 2003 to control emissions from the one (1) scale load-out system under grain shipping area. Pursuant to 40 CFR 60.14(a) and 60.14(e)(5), the addition of a control device is not considered a modification to the emission unit under NSPS, since the control device reduces the emission of air pollutants and is more environmentally beneficial than no control. Therefore, these units are not subject to the requirements of the New Source Performance Standard for Grain Elevators, 40 CFR 60.300, Subpart DD.

- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in this permit renewal.

State Rule Applicability - Entire Source

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

This source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit of all attainment regulated pollutants are less than 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.

326 IAC 2-6 (Emission Reporting)

This source is located in Jay County and the potential to emit of each criteria pollutant is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does 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 Exemptions), opacity shall meet the following, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

The source is subject to the requirements of 326 IAC 6-4, because unpaved roads at the source have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

State Rule Applicability – Individual Facilities

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) the particulate from the listed emission units shall be limited by the following:

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

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

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

Emissions Unit	326 IAC 6-3 Limit (pounds per hour)
Grain Receiving	46.22
Grain Internal Handling	53.06
Column Grain Dryer	53.62
Grain Shipping	44.82
Grain Cleaning	46.22
Grain Storage	46.22

- (a) The potential to emit PM from grain receiving is 4.25 pounds per hour. This facility will be in compliance without controls.
- (b) The potential to emit PM from grain internal handling is 6.43 pounds per hour. This facility will be in compliance without controls.
- (c) The potential to emit PM from the column grain dryer is 28.71 pounds per hour. This facility will be in compliance without controls.
- (d) The potential to emit PM from grain shipping is 4.42 pounds per hour. This facility will be in compliance without controls.
- (e) The potential to emit PM from grain cleaning is 4.47 pounds per hour. This facility will be in compliance without controls.
- (f) The potential to emit PM from grain storage is 1.49 pounds per hour. This facility will be in compliance without controls.

The source has baghouses and cyclones for particulate control in operation which control emissions from the grain receiving, internal handling, grain dryer, grain shipping, grain cleaning, and grain storage facilities; however the baghouses and cyclones are not necessary to be in compliance with 326 IAC 6-3-2.

Compliance Determination and Monitoring Requirements

- (a) The compliance determination and monitoring requirements applicable to this source are as follows:

Emission Unit/Control	Operating Parameters	Frequency
Stack exhausts DC3, DC6, DC8, and DC9	Visible Emission Notations	Once per day
Baghouse	Parametric Monitoring	Once per day
Cyclone	Failure Detection	As Required

Recommendation

The staff recommends to the Commissioner that the MSOP 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 16, 2008.

Conclusion

The operation of this stationary grain terminal shall be subject to the conditions of the attached MSOP Renewal No. M075-26994-00006.

**Appendix A: Emissions Calculations
Summary**

Company Name: The Andersons, Inc. Dunkirk Operations
Address City IN Zip: 4678 S. 1100 W., Dunkirk, Indiana 47336
Permit Number: 075-26994-00006
Reviewer: Sarah Conner, Ph. D.
Date: 10/16/2008

Uncontrolled Potential Emissions (tons/year)

Emissions Generating Activity										
Pollutant	Natural Gas	Grain	Grain	Grain	Grain	Grain	Grain	Mitigated Paved	Mitigated Unpaved	TOTAL
	Combustion	Receiving	Shipping	Internal Handling	Drying	Cleaning	storage	Roads	Roads	
PM	0.38	18.60	7.40	28.18	125.75	19.58	6.53	8.91	9.47	224.78
PM10	1.51	5.38	1.10	15.71	31.44	4.96	1.64	1.74	2.56	66.03
*PM2.5	1.51	0.91	0.19	2.68	5.37	0.84	0.29	1.74	2.56	16.07
SO2	5.67	-	-	-	-	-	-	-	-	5.67
NOx	19.91	-	-	-	-	-	-	-	-	19.91
VOC	1.10	-	-	-	-	-	-	-	-	1.10
CO	16.73	-	-	-	-	-	-	-	-	16.73
total HAPs	0.38	-	-	-	-	-	-	-	-	0.38
worst case single HAP (Hexane)	0.36	-	-	-	-	-	-	-	-	0.36

Total emissions based on rated capacity at 8,760 hours/year.

* For Paved and Unpaved Roads, the assumption is that PM10=PM2.5

Controlled Potential Emissions (tons/year)

Emissions Generating Activity										
Pollutant	Natural Gas	Grain	Grain	Grain	Grain	Grain	Grain	Paved	Unpaved	TOTAL
	Combustion	Receiving	Shipping	Internal Handling	Drying	Cleaning	storage	Roads	Roads	
PM	0.38	3.72	1.94	2.82	33.32	3.92	6.53	8.91	9.47	70.99
PM10	1.51	1.08	0.65	1.57	8.33	0.99	1.64	1.74	2.56	20.07
*PM2.5	1.51	0.18	0.11	0.27	1.42	0.17	0.29	1.74	2.56	8.24
SO2	5.67	-	-	-	-	-	-	-	-	5.67
NOx	19.91	-	-	-	-	-	-	-	-	19.91
VOC	1.10	-	-	-	-	-	-	-	-	1.10
CO	16.73	-	-	-	-	-	-	-	-	16.73
total HAPs	0.38	-	-	-	-	-	-	-	-	0.38
worst case single HAP (Hexane)	0.36	-	-	-	-	-	-	-	-	0.36

Total emissions based on rated capacity at 8,760 hours/year, after control.

* For Paved and Unpaved Roads, mitigated emission factors were used and the assumption is that PM10=PM2.5

**Appendix A: Emissions Calculations
Grain Elevator (All Types)**

Company Name: The Andersons, Inc. Dunkirk Operations
Address City IN Zip: 4678 S. 1100 W., Dunkirk, Indiana 47336
Permit Number: 075-26994-00006
Reviewer: Sarah Conner, Ph. D.
Date: 10/16/2008

Grain	*bushels/year	hours of operation	bushels/hr	lbs / bushel	lbs / hour	Grain Throughput (tons/hr)	Grain Throughput (tons/year)
Wheat / Soy	7,000,000	8760	799.09	60	47945	23.973	210000
Corn / Rye	9,000,000	8760	1027.40	56	57534	28.767	252000
Barley	0	8760	0.00	48	0	0.000	0
Rice	0	8760	0.00	45	0	0.000	0
Oat	0	8760	0.00	32	0	0.000	0
Additional of either wheat/soy or corn	2,000,000	8760	228.31	60	13699	6.849	60000
Wheat, Soy, Corn shipped equals 15MM bushels	15,000,000	8760	1712.33	60	102740	51.370	450000
Total Grain Received (tons of grain handled or processed per hour) =						59.589	522000
						Maximum amount of grain dried	1143180

*Total maximum amount of grain received per year equals 18.0 MM bushels.
 (9.0 MM bushels Corn, 6.0 MM bushels Soybeans, 1.0 MM bushels Wheat, additional 2.0MM of either Corn/Soybeans or Wheat)

Unloading/Receiving					
**Straight Truck (lb/ton)			**Hopper Truck (lb/ton)		
PM	PM-10	PM2.5	PM	PM-10	PM2.5
0.18	0.059	0.01	0.035	0.0078	0.0013

Drying		
Column Dryer		
PM	PM-10	PM2.5
0.22	0.055	0.0094

Grain Cleaning		
PM	PM-10	PM2.5
0.075	0.019	0.0032

Unloading/Receiving	PM	PM10	PM2.5
Wheat/Soy	7.48125	2.163	0.364875
Corn/Rye	8.9775	2.5956	0.43785
Additional Wheat/Soy or Corn	2.1375	0.618	0.10425
Total uncontrolled	18.59625	5.3766	0.906975
Controlled (efficiency 80%)	3.71925	1.07532	0.181395

***Drying	PM	PM10	PM2.5
Total uncontrolled	125.7498	31.43745	5.37295
Controlled (efficiency 73.50%)	33.323697	8.3309243	1.42383

Cleaning	PM	PM-10	PM2.5
Total uncontrolled	19.575	4.959	0.8352
****Control (efficiency 80%)	3.915	0.9918	0.16704

***Amount of grain dried annually is calculated based on the maximum rated capacity of the drier which is 4,500 bushels per hour
 The amount of grain dried equals 1143180 tons per year

****Control efficiency is assumed to be the same as for unloading and receiving

** 25% of unloading is done through Strait truck and 75% is done through Hopper truck

*Headhouse and Grain handling		
PM	PM-10	PM2.5
0.061	0.034	0.0058

Storage		
PM	PM-10	PM2.5
0.025	0.0063	0.0011

***Shipping					
Truck (unspecified)			Railcar		
PM	PM-10	PM2.5	PM	PM-10	PM2.5
0.086	0.029	0.0049	0.027	0.0022	0.00037

	PM	PM10	PM2.5	storage uncontrolled	PM	PM10	PM2.5
Wheat/Soy	12.81	7.14	1.218				
Corn/Rye	15.4	8.6	1.4616				
Additional Wheat/Soy or Corn	3.7	2.0	0.348				
Total uncontrolled	28.2	15.7	2.6796				
Controlled (efficiency 90%)	2.8182	1.5708	0.26796				

Shipping	PM	PM10	PM2.5	PM	PM10	PM2.5
Wheat/Soy/Corn	1.935	0.6525	0.11025	5.4675	0.4455	0.074925
Total uncontrolled	1.935	0.6525	0.11025	5.4675	0.4455	0.074925
Controlled (efficiency 99.9%)	-	-	-	0.0054675	0.000446	0.000074925

*** 10% of shipping is done by truck, this is uncontrolled.
 and 90% of shipping is done by Railcar, this is controlled.

*It is assumed that the Grain throughput for Headhouse and Grain handling is twice the throughput of Receiving.

Methodology

Emission factors are from AP 42 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators (3/03)
 Potential Emissions (ton/yr) = Throughput (ton/hr) * Emission factor (lb/ton) * 8760 (hours/year) / 2000 (lbs/ton)
 Controlled Potential Emissions (ton/yr) = Throughput (ton/hr) * Emission factor (lb/ton) * 8760 (hours/year) / 2000 (lbs/ton) * (1-Control Efficiency)

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: The Andersons, Inc. Dunkirk Operations
Address City IN Zip: 4678 S. 1100 W., Dunkirk, Indiana 47336
Permit Number: 075-26994-00006
Reviewer: Sarah Conner, Ph. D.
Date: 10/16/2008

Heat Input Capacity
MMBtu/hr

45.5

Potential Throughput
MMCF/yr

398.2

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	PM2.5	SO2	NOx	VOC	CO
	1.9	7.6	7.6	28.5	100 **see below	5.5	84
Potential Emission in tons/yr	0.4	1.5	1.5	5.7	19.9	1.1	16.7

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

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

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

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
 Natural Gas Combustion Only
 MM BTU/HR <100
 HAPs Emissions**

Company Name: The Andersons, Inc. Dunkirk Operations
Address City IN Zip: 4678 S. 1100 W., Dunkirk, Indiana 47336
Permit Number: 075-26994-00006
Pit ID:
Reviewer: Sarah Conner
Date: 9/18/2008

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	4.181E-04	2.389E-04	1.493E-02	3.584E-01	6.770E-04

HAPs - Metals						
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03	Total
Potential Emission in tons/yr	9.956E-05	2.190E-04	2.788E-04	7.566E-05	4.181E-04	3.758E-01

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations
Fugitive Dust Emissions - Unpaved Roads**

Company Name: The Andersons, Inc. Dunkirk Operations
Address City IN Zip: 4678 S. 1100 W., Dunkirk, Indiana 47336
Permit Number: 075-26994-00006
Reviewer: Sarah Conner, Ph. D.
Date: 10/16/2008

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 Grain Received = bushels/yr
Bulk Density of Grain Received = tons/bushel (0.03 tons/bushel for wheat/soybeans and 0.028 tons/bushel for corn/sorghum)
Maximum Annual Grain Received = tons/yr

Maximum Annual Grain Shipped = 1,500,000 bushels/yr
Bulk Density of Grain Shipped = 0.03 tons/bushel (0.03 tons/bushel for wheat/soybeans and 0.028 tons/bushel for corn/sorghum)
Maximum Annual Grain Shipped = 45,000 tons/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)
Farmer Grain Truck Entering Full	Grain truck (650 bushel)	14.5	30.5	45.0	12000.00	540000	660	0.125	1500.00
Farmer Grain Truck Leave Empty	Grain truck (650 bushel)	14.5	0	14.5	12000.00	174000.0	660	0.125	1500.00
Shipping Grain Truck Entering Empty	Grain truck (650 bushel)	14.5	0	14.5	1000.00	14500.0	660	0.125	125.00
Shipping Grain Truck Leaving Full	Grain truck (650 bushel)	14.5	30.5	45.0	1000.00	45000	660	0.125	125.00
Total					26000	773500			3250.00

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

Unmitigated Emission Factor, $E_f = k \left[\frac{s}{12} \right]^a \left[\frac{W}{3} \right]^b$ (Equation 1a from AP-42 13.2.2)

	PM	PM10	
where k =	4.9	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.4	6.4	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 municipal solid waste landfills)
a =	0.7	0.9	= constant (AP-42 Table 13.2.2-2)
W =	29.8	29.8	tons = average vehicle weight (provided by source)
b =	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

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

	PM	PM10	
Unmitigated Emission Factor, $E_f =$	8.86	2.39	lb/mile
Mitigated Emission Factor, $E_{ext} =$	5.83	1.57	lb/mile

Process	Vehicle Type	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)
Farmer Grain Truck Entering Full	Grain truck (650 bushel)	4.37	1.18
Farmer Grain Truck Leave Empty	Grain truck (650 bushel)	4.37	1.18
Shipping Grain Truck Entering Empty	Grain truck (650 bushel)	0.36	0.10
Shipping Grain Truck Leaving Full	Grain truck (650 bushel)	0.36	0.10
Totals		9.47	2.56

Methodology

Maximum Annual Grain Throughput (tons/yr) = [Maximum Annual Grain Throughput (bushels/yr)] * [Bulk Density of Grain (tons/bushel)]
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)]
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PTE = Potential to Emit

**Appendix A: Emissions Calculations
Fugitive Dust Emissions - Paved Roads**

Company Name: The Andersons, Inc. Dunkirk Operations
Address City IN Zip: 4678 S. 1100 W., Dunkirk, Indiana 47336
Permit Number: 075-26994-00006
Reviewer: Sarah Conner, Ph. D.
Date: 10/16/2008

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 Grain Received = bushels/yr
 Bulk Density of Grain Received = tons/bushel (0.03 tons/bushel for wheat/soybeans and 0.028 tons/bushel for corn/sorghum)
 Maximum Annual Grain Received = tons/yr

Maximum Annual Grain Shipped = bushels/yr
 Bulk Density of Grain Shipped = tons/bushel (0.03 tons/bushel for wheat/soybeans and 0.028 tons/bushel for corn/sorghum)
 Maximum Annual Grain Shipped = tons/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)
Farmer Grain Truck Entering Full	Grain truck (650 bushel)	14.5	30.5	45.0	12000.00	540000	660	0.125	1500.00
Farmer Grain Truck Leave Empty	Grain truck (650 bushel)	14.5	0	14.5	12000.00	174000.0	660	0.125	1500.00
Shipping Grain Truck Entering Empty	Grain truck (650 bushel)	14.5	0	14.5	1000.00	14500.0	660	0.125	125.00
Shipping Grain Truck Leaving Full	Grain truck (650 bushel)	14.5	30.5	45.0	1000.00	45000	660	0.125	125.00
Total						26000	773500		3250.0

Average Vehicle Weight Per Trip = tons/trip
 Average Miles Per Trip = 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	
where k =	0.082	0.016	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	29.8	29.8	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	7.4	7.4	g/m ² = Silt Loading Values of paved roads at municipal solid waste landfill (Table 13.2.1-4)

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

Mitigated Emission Factor, Eext =
 where p = days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = days per year

	PM	PM10	
Unmitigated Emission Factor, Ef =	5.99	1.17	lb/mile
Mitigated Emission Factor, Eext =	5.48	1.07	lb/mile

Process	Vehicle Type	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)
Farmer Grain Truck Entering Full	Grain truck (650 bushel)	4.11	0.80
Farmer Grain Truck Leave Empty	Grain truck (650 bushel)	4.11	0.80
Shipping Grain Truck Entering Empty	Grain truck (650 bushel)	0.34	0.07
Shipping Grain Truck Leaving Full	Grain truck (650 bushel)	0.34	0.07
Totals		8.91	1.74

Methodology

Maximum Annual Grain Throughput (tons/yr) = [Maximum Annual Grain Throughput (bushels/yr)] * [Bulk Density of Grain (tons/bushel)]
 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)]
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PTE = Potential to Emit