INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: February 15, 2006

RE: Anderson Clymers / 017-21536-00023

FROM: Paul Dubenetzky
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, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot 1/10/05

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NEW SOURCE CONSTRUCTION AND FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) OFFICE OF AIR QUALITY

The Andersons Clymers Ethanol, LLC
County Roads 300S and 350W
Logansport, Indiana 46947

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

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

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

Operation Permit No.: 017-21536-00023	
Issued by: Original Signed By: Paul Dubenetzky, Assistant Commissioner Office of Air Quality	Issuance Date: February 15, 2006 Expiration Date: February 15, 2011

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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 A.1, A.3, and A.4 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 grain terminal and an ethanol production plant.

Authorized Individual:	Stacey Schmidt, Director - Hazard Management & Engineering
Source Address:	County Road 300 S and 350 W, Logansport, IN 46947
Mailing Address:	P.O. B ox 119, Maumee, Ohio 43537
General Source Phone:	(419) 891-2957
SIC Code:	2869, 5153
Source Location Status:	Cass 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 1 of 28 Source Categories

A.2 Source Definition [326 IAC 2-8-1] [326 IAC 2-7-1(22)]

This stationary source consists of the following plants:

(a) Existing Grain Terminal is located at County Road 300 S and 350 W, Logansport, IN 46947; and

(b) Proposed Ethanol Plant will also be located at County Road 300 S and 350 W, Logansport, IN 46947.

Since the two (2) plants are located at the same address, the grain terminal supports the ethanol plant, and are under common control of the same entity, they will be considered one (1) source.

A.3 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:

Ethanol Production Plant:

(a) Ethanol Production Plant with a maximum production rate of 110,000,000 gallons of ethanol per year:

(1) One (1) day bin with a maximum throughput of 7,500 bushels per hour.

(2) One (1) grain scalper, with a maximum throughput of 1,100,000 tons per year controlled by baghouse S-30.

(3) Four (4) hammermills each with a maximum throughput of 100 tons per hour controlled by baghouse S-30.

(4) One (1) cook water tank with a capacity of 374,000 gallons.

(5) One (1) slurry mixer receiver (blend) tank with a capacity of 470 gallons. The emissions from this tank will be exhausted indirectly to the two Recuperative Thermal Oxidizers (RTOs) (C-10 and C-11) through the slurry tanks.

(6) Two (2) slurry tanks each with a capacity of 25,000 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(7) Two (2) cook tubes each with a capacity of 5,200 gallons.

(8) One flash tank with a capacity of 4,500 gallons.

(9) One syrup tank with a capacity of 180,000 gallons.

(10) One fermentation process, with a maximum throughput of 13,000 gallons per hour, controlled by CO_2 scrubber S-40, which includes:

(A) Seven (7) fermenters, each with a capacity of 807,000 gallons.
(B) Two (2) liquefaction tanks each with a capacity of 128,400 gallons.
(C) Two (2) yeast tanks each with a capacity of 13,500 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(11) One distillation and evaporation process controlled by the two RTOs (C-10 and C-11) with a maximum throughput of 1,100,000 tons per year consisting of the following:

(A) One (1) beerwell with a capacity of 1,080,000 gallons.
(B) One beer column.
(C) One side stripper.
(D) Six (6) molecular sieve condensers.
(E) Six (6) centrifuges.
(F) Two (2) centrate tanks with a capacity of 1,690 gallons each.
(G) Eight (8) evaporators.
(H) One (1) stillage tank with a capacity of 374,000 gallons.

(12) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 43 tons per hour, controlled by the two RTOs (C-10 and C-11). This process consists of the following:

(A) Four (4) DDGS dryers, identified as Dryers A, B, C, and D, each dryer has a heat input capacity of 45 MMBtu/hr or a total heat input capacity of 180 MMBtu/hr, with a total drying rate of 356,880 tons of DDGS per year.
(B) One (1) DDGS cooling drum with a maximum throughput of 356,880 tons of DDGS per year, controlled by a baghouse, identified as S-70.
(C) One (1) four cell cooling tower with a circulation rate of 3,000,000 gallons per hour.
(D) One DDGS truck/rail loadout with a maximum capacity of 500 tons per hour, controlled by a baghouse, identified as S-90.

(13) Ethanol loading racks with a total maximum throughput of 110,000,000 gallons per year of ethanol, consisting of the following:

(A) One (1) ethanol truck loading rack, utilizing submerged loading only. The truck loading process is controlled by an enclosed flare with a heat input capacity of 6.4 million British thermal units per hour (MMBtu/hr).

(B) One (1) ethanol railcar loading rack, utilizing submerged loading only. The railcar loading process is controlled by an enclosed flare with a heat input capacity of 6.4 MMBtu/hr.

(14) Two (2) Recuperative Thermal Oxidizers (RTOs)/heat recovery steam generators, identified as C-10 and C-11, using natural gas and process waste gases, each with a maximum heat input capacity of 122 MMBtu/hr.

(15) One (1) 300 horsepower (Hp) diesel-fired emergency pump.

(16) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-2 that will store 190 proof ethanol with a capacity of 225,000 gallons.

(17) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-3 that will store 200 proof ethanol with a capacity of 225,000 gallons.

(18) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-4 that will store natural gasoline with a capacity of 91,000 gallons.

(19) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-5 that will store denatured ethanol with a capacity of 2,114,000 gallons.

(20) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-6 that will store denatured ethanol with a capacity of 750,000 gallons.

Grain Terminal:

(b) Grain Terminal with a maximum capacity of 1,172,000 tons of grains per year:

(1) One (1) truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1.

(2) One (1) rail/truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1.

(3) One (1) rail car/truck loading site, constructed in 1974, with no emission controls.

(4) One (1) Berico natural gas-fired dryer, constructed in 1974, with a maximum throughput capacity of 3,000 bushel per hour and a maximum heat input capacity of 16.5 million British thermal units (MMBtu) per hour with screen house enclosure.

(5) One (1) grain cleaner, constructed in 1974, rated at 15,000 bushels per hour with particulate emissions controlled by a baghouse, identified as # 2.

(6) Four million (4,000,000) bushel grain storage capacity in several steel tanks with no emission controls.

(7) Four hundred thousand (400,000) bushel grain storage capacity in concrete silos with particulate emissions controlled by a baghouse, identified as # 2.

(8) Two (2) grain legs, constructed in 1974, with a maximum capacity of 7,500 bushel per hour, with particulate emissions controlled by a baghouse, identified as # 2.

(9) One (1) hopper bottom truck grain receiving process, constructed in 2002, consisting of one (1) enclosed drag conveyor with a maximum design throughput of 1,000,000 bushels of corn and soybeans per year, with particulate emissions controlled by one (1) conveyor enclosure.

A.4 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

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

(a) One (1) vertical fixed roof storage tank, identified as Tank-1 that will store corrosion inhibitor with a capacity of 3,008 gallons.

(b) One (1) package anaerobic biological water treatment system, identified as methanator. The gas produced by this system will be used to supplement the fuel used in two of the four dryers (Dryers A and C). When these dryers are not in operation, the gas is routed to the methanator flare system (S-60).

(c) One (1) pressurized storage tank and associated piping for anhydrous ammonia.

(d) Natural draft cooling towers not regulated under a NESHAP.

(e) Various process tanks, including thin stillage, syrup, cook water, liquefaction, and whole stillage.

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

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

A.6 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either

(1) incorporated as originally stated,

(2) revised, or

(3) deleted

by this permit.

(b) All previous registrations and permits are superseded by this permit.

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SECTION B GENERAL CONDITIONS

B.1 Permit No Defense [IC 13]

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

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

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

B.3 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) 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.4 Enforceability [326 IAC 2-8-6]

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 and the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Termination of Right to Operate [326 IAC 2-8-9] [326 IAC 2-8-3(h)]

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

B.6 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.7 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

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

B.8 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "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.9 Compliance Order Issuance [326 IAC 2-8-5(b)]

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

B.10 Certification [326 IAC 2-8-3(d)] [326 IAC 2-8-4(3)(C)(i)] [326 IAC 2-8-5(1)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an authorized individual of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

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

B.11 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

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

B.12 Preventive Maintenance Plan [326 IAC 1-6-3] [326 IAC 2-8-4(9)] [326 IAC 2-8-5(a)(1)]

(a) If required by specific conditions in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:

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

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

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

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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 the "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.13 Emergency Provisions [326 IAC 2-8-12]

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

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

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

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

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

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

Telephone No.: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section) or,
Telephone No.: 317-233-5674 (ask for Compliance Section)
Facsimile No.: 317-233-5967

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

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

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

(A) A description of the emergency;

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

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

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

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

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

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

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

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

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

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

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

(h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.14 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does need to be included in this report.

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

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

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

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

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

(1) That this permit contains a material mistake.

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

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

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

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

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

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

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, IN 46204-2251

(b) Timely Submittal of Permit Renewal [326 IAC 2-8-3]

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

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

(B) 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.

(2) If IDEM, OAQ upon receiving a timely and complete 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.

(c) Right to Operate After Application for Renewal [326 IAC 2-8-9]
If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ, any additional information identified as needed to process the application.

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

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

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

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

(d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

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

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

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

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

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

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

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

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

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

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

(b) Emission Trades [326 IAC 2-8-15(c)]

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

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

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

B.19 Permit Revision Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-17-3-2] [IC13-30-3-1]

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, and U.S. EPA, or an authorized representative to perform the following:

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

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

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

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

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

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

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

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

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality

100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

(a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

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

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4320 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.23 Advanced Source Modification Approval [326 IAC 2-8-4(11)] [326 IAC 2-1.1-9

(a) The requirements to obtain a permit revision under 326 IAC 2-8-11.1 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.2 and A.3.

(b) Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction work is suspended for a continuous period of one (1) year or more.

B.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, including 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 make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)

(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) 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 apply for a Significant Permit Revision, pursuant to 326 IAC 2-8-11.1(g)(2) when adding insignificant activities not already listed in this permit in order to adjust the emissions cap limitations.

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

C.3 Opacity [326 IAC 5-1]

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

(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(3)]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and in 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 Operation of Equipment [326 IAC 2-8-5(a)(4)]

Except as otherwise provided by statute, rule or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.8 Stack Height [326 IAC 1-7]

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

C.9 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

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

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

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

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

(A) Asbestos removal or demolition starts 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
Asbestos Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "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 Accredited 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 Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

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

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

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

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the “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 the “authorized individual” as defined by 326 IAC 2-1.1-1(1).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented when operation of the ethanol plant begins. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated when operation of the ethanol plant begins. the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

in writing, prior to the compliance schedule (startup of operation of the ethanol plant) with full justification of the reasons for inability to meet this date.

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

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

C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

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

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

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

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

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

C.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.16 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

(a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records;

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

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of

the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.18 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.19 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "authorized individual" as defined by 326 IAC2-1.1-1(1).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) The first report shall cover the period commencing on the date of initial startup of the ethanol plant and ended on the last day of the reporting period. All subsequent reporting periods shall be 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.

C.20 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair or disposal must comply with the required practices pursuant to 40 CFR 82.156

(b) Equipment used during the maintenance, service, repair or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

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SECTION D.1 FACILITY OPERATION CONDITIONS

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

Ethanol Production Plant:

(a) Ethanol Production Plant with a maximum production rate of 110,000,000 gallons of ethanol per year:

(1) One (1) day bin with a maximum throughput of 7,500 bushels per hour.

(2) One (1) grain scalper, with a maximum throughput of 1,100,000 tons per year controlled by baghouse S-30.

(3) Four (4) hammermills each with a maximum throughput of 100 tons per hour controlled by baghouse S-30.

(4) One (1) cook water tank with a capacity of 374,000 gallons.

(5) One (1) slurry mixer receiver (blend) tank with a capacity of 470 gallons. The emissions from this tank will be exhausted indirectly to the two Recuperative Thermal Oxidizers (RTOs) (C-10 and C-11) through the slurry tanks.

(6) Two (2) slurry tanks each with a capacity of 25,000 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(7) Two (2) cook tubes each with a capacity of 5,200 gallons.

(8) One flash tank with a capacity of 4,500 gallons.

(9) One syrup tank with a capacity of 180,000 gallons.

(10) One fermentation process, with a maximum throughput of 13,000 gallons per hour, controlled by CO_2 scrubber S-40, which includes:

(A) Seven (7) fermenters, each with a capacity of 807,000 gallons.
(B) Two (2) liquefaction tanks each with a capacity of 128,400 gallons.
(C) Two (2) yeast tanks each with a capacity of 13,500 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(11) One distillation and evaporation process controlled by the two RTOs (C-10 and C-11) with a maximum throughput of 1,100,000 tons per year consisting of the following:

(A) One (1) beerwell with a capacity of 1,080,000 gallons.
(B) One beer column.
(C) One side stripper.
(D) Six (6) molecular sieve condensers.
(E) Six (6) centrifuges.
(F) Two (2) centrate tanks with a capacity of 1,690 gallons each.
(G) Eight (8) evaporators.
(H) One (1) stillage tank with a capacity of 374,000 gallons.

(12) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 43 tons per hour, controlled by the two RTOs (C-10 and C-11). This process consists of the following:

(A) Four (4) DDGS dryers, identified as Dryers A, B, C, and D, each dryer has a heat input capacity of 45 MMBtu/hr or a total heat input capacity of 180 MMBtu/hr, with a total drying rate of 356,880 tons of DDGS per year.

(B) One (1) DDGS cooling drum with a maximum throughput of 356,880 tons of DDGS per year, controlled by a baghouse, identified as S-70.

(C) One (1) four cell cooling tower with a circulation rate of 3,000,000 gallons per hour.

(D) One DDGS truck/rail loadout with a maximum capacity of 500 tons per hour, controlled by a baghouse, identified as S-90.

(13) Ethanol loading racks with a total maximum throughput of 110,000,000 gallons per year of ethanol, consisting of the following:

(A) One (1) ethanol truck loading rack, utilizing submerged loading only. The truck loading process is controlled by an enclosed flare with a heat input capacity of 6.4 million British thermal units per hour (MMBtu/hr).

(B) One (1) ethanol railcar loading rack, utilizing submerged loading only. The railcar loading process is controlled by an enclosed flare with a heat input capacity of 6.4 MMBtu/hr.

(14) Two (2) Recuperative Thermal Oxidizers (RTOs)/heat recovery steam generators, identified as C-10 and C-11, using natural gas and process waste gases, each with a maximum heat input capacity of 122 MMBtu/hr.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.1.1 Permit No Defense

This permit 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.

Effective Date of the Permit

D.1.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.1.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

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

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(a) The PM emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Hammermill, Scalping, and Grain Handling to Ethanol Day Bin	Baghouse S-30	4.1
DDGS Storage/Loadout	Baghouse S-90	0.98
Cooling Drum	Baghouse S-90	0.73
DDGS Dryer	RTOs C-10&C-11	6.9

Compliance with these PM limits in combination with the PM emission limits in Condition D.2.3, limits the PM emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable.

(b) The PM10 emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM10 Emission Limit (lbs/hr)
Hammermill, Scalping, and Grain Handling to Ethanol Day Bin	Baghouse S-30	2.09
DDGS Storage/Loadout	Baghouse S-90	0.33
Cooling Drum	Baghouse S-70	0.73
DDGS Dryer	RTOs C-10&C-11	6.9

Compliance with these PM10 limits in combination with the PM10 emission limits in Condition D.2.3, limits the PM10 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(c) The PM/PM10 emissions from the cooling tower shall not exceed 3.75 pounds per hour, and 16.44 tons per year. Compliance with this limit shall render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(d) The NOx emissions from the following emission units shall be limited as follows:

(1) The NOx emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas, and the total natural gas fuel usage shall be limited to 2,137.4 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

(2) The NOx emissions from the four DDGS Dryers shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas, and the total natural gas fuel usage shall be limited to 1,550.5 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

When using biogas as fuel for the DDGS Dyers every 1.17 cubic feet is equivalent to 1 cubic foot of natural gas.

(3) The RTOs (C-10 & C-11) shall only combust natural gas as fuel, and the DDGS dryers shall only combust natural gas and biogas as fuel.

(4) The NOx emissions from the RTOs (C-10 & C-11) shall be limited to 12.44 pounds per hour.

Compliance with these limits in combination with the NOx emission limits in Condition D.3.1, limits the NOx emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(e) The VOC emissions from the following emission units shall be limited as follows:

(1) The VOC emissions from the DDGS Cooling Drum shall be limited to 3 pounds per hour.

(2) The VOC emissions from the fermentation scrubber shall be limited to 7.5 pounds per hour.

(3) The VOC emissions from the loading racks shall be limited as follows:

(i) The combined VOC emissions from the truck loading rack and the railcar loading rack shall not exceed 2.03 lbs/hr.

(ii) The truck loading rack and the railcar loading rack shall be limited to a combined throughput of 110,000,000 gallons of ethanol per twelve consecutive month period with compliance determined at the end of each month.

(iii) The truck loading rack and the railcar loading rack shall be limited to 1690 operating hours per twelve consecutive month period with compliance determined at the end of each month.

(iv) The railcar loading rack and the truck loading rack shall utilize only a submerged fill loading system.

(4) The VOC emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11), which controls emissions from distillation, evaporation, yeast tanks, and the DDGS Dryers shall not exceed 8.15 pound per hour.

Compliance with these limits shall limit the VOC emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(f) The combined CO emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) and the four DDGS Dryers shall not exceed 21.6 pounds per hour. Compliance with this limit in combination with the CO emission limit in Condition D.2.3 shall limit the CO emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(g) The SO2 emissions from the four DDGS dryers shall not exceed 0.45 pound per ton of DDGS dried, and the throughput shall be limited to a total of 356,880 tons of DDGS dried per twelve consecutive month period with compliance determined at the end of each month. Compliance with this limit shall limit the SO_2 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, PSD and 326 IAC 2-7, Part 70 not applicable.

(h) The following conditions shall apply to the biomethanator and the enclosed flare:

(1) The operation of the biomethanator flare shall be limited to 500 operating hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The biomethanator flare and the enclosed flare shall be designed as a smokeless flares.

(3) Both flares shall have a soot concentration value of 0 mg per liter.

Compliance with this condition shall render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(i) Pursuant to 326 IAC 2-8-4 (FESOP), and to render the requirements of 326 IAC 2-4.1-(New Source Toxics Control) not applicable, the HAP emissions from the following emission units shall be limited as follows:

(1) DDGS drying controlled by the RTOs (C-10 and C-11) shall not exceed 0.46 pounds Acetaldehyde per hour.

(2) Fermentation process controlled by the scrubber (S-40) shall not exceed 1.05 pounds Acetaldehyde per hour.

Compliance with these limits in combination with the single HAP and total HAPs emission limits for other units, limits the single HAP emissions and total HAPs emissions from the entire source to less than ten (10) tons per year and twenty five (25) tons per year, respectively. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) are not applicable.

D.1.5 VOC Emissions General Reduction Requirements [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the Best Available Control Technology (BACT) for the following emission units shall be as follows:

(a) Fermentation Process

(1) The VOC emissions from the fermentation process shall be controlled by wet scrubber S-40.

(2) The VOC emissions from the fermentation process wet scrubber S-40 shall be limited to 7.5 pounds per hour.

(3) The overall VOC control efficiency, which includes capture and absorption efficiencies, for the wet scrubber S-40 shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(b) Dried Distillers Grain and Solubles (DDGS) Dryers

(1) The VOC emissions from the DDGS Dryers shall be controlled by the two (2) Recuperative Thermal Oxidizers (C-10 & C-11).

(2) The VOC emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) shall not exceed 8.15 pounds per hour.

(3) The overall control efficiency, which includes capture and destruction efficiencies, for each of the two Recuperative Thermal Oxidizers (C-10 & C-11) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) Ethanol Loading Rack

(1) The VOC emissions from the ethanol loadout shall be collected and controlled by a flare when loading denatured ethanol.

(2) The overall efficiency for the enclosed flare (including the capture efficiency and destruction efficiency) shall be at least 98%.

(3) The VOC emissions from the flare for both truck and rail shall not exceed 2.03 lbs/hr.

(d) Distillation and Evaporation

(1) The VOC emissions from the distillation and evaporation process shall be controlled by the two RTOs (C-10 and C-11).

(2) The overall control efficiency, which includes capture and destruction efficiencies, for each of the two Recuperative Thermal Oxidizers (C-10 & C-11) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(3) The VOC emissions from the two RTOs (C-10 and C-11) shall not exceed 8.15 lbs/hr.

D.1.6 Particulate Emission Limitations [326 IAC 6-3-2(e)]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from each of the following processes shall not exceed the pound per hour limits as follows:

Process /Facility	Process Weight Rate (tons/hr)	Particulate Emissions (lbs/hr)
Hammermills	125.6	53.6
DDGS Cooling Drum	40.7	42.6
DDGS Storage/Loadout	40.7	42.6
DDGS Drying	40.7	42.6

The pound per hour limitations shall be calculated using the following equation:

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 is pounds per hour and
P = process weight rate in tons per hour

D.1.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the recuperative thermal oxidizers/heat recovery steam generators (C-10 and C-11) except when otherwise specified in 40 CFR Part 60, Subpart Db.

D.1.8 NOx Emissions [326 IAC 12-1][40 CFR 60, Subpart Db]

(a) Pursuant to 40 CFR 60.44b, the NOx emissions from each recuperative thermal oxidizer/heat recovery steam generator shall not exceed 0.1 lbs/MMBtu.

(b) Pursuant to 40 CFR 60.48b, the Permittee shall comply with one of the following monitoring conditions for the recuperative thermal oxidizers/heat recovery steam generators (C-10 and C-11):

(1) Pursuant to 40 CFR 60.48b(b), the Permittee shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere; or

(2) Pursuant to 40 CFR 60.48b(g)(2), the Permittee shall monitor the operating conditions for the recuperative thermal oxidizers/heat recovery steam generators (C-10 and C-11) and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to 40 CFR 60.49b(c).

D.1.8 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emissions for Source of Indirect Heating), the total particulate emissions from the two RTOs/heat recovery steam generating Units (C-10 and C-11) shall not exceed 0.26 pounds per million British thermal units (lb/MMBtu) heat input.

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

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

Compliance Determination Requirements

D.1.10 Particulate Matter and Particulate Matter Less Than Ten Microns (PM10) Control

In order to comply with Conditions D.1.4 (a) and (b), and D.1.6 the baghouses and RTOs shall be in operation at all times the Hammermills, DDGS cooling drum, DDGS storage/loadout, distillation, evaporation, and DDGS dryers are in operation.

D.1.11 Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAPs) Control

In order to comply with D.1.4(d) and (g) and D.1.5, the RTOs , scrubber, and flare shall be in operation at all times the distillation, evaporation, yeast tanks, DDGS dryers, Fermentation, and ethanol loading rack are in operation.

D.1.12 Testing Requirements [326 IAC 2-2] [326 IAC 2-8-5(a)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.4, D.1.5, and D.1.6, the Permittee shall perform PM, PM10, VOC, CO, NOx, SO_2, and Acetaldehyde stack tests. PM/PM10 and VOC testing shall include emission rates, and overall control efficiency (capture and destruction/absorption efficiencies) of the RTOs/heat recovery steam generators, scrubber, enclosed flare, and baghouses. These tests shall be conducted within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. The PM, PM10, VOC, CO, NOx, SO_2, and Acetaldehyde tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.1.13 Continuous Emissions Monitoring [326 IAC 3-5] [326 IAC 12] [40 CFR 60, Subpart Db] [326 IAC 2-7-6(1),(6)]

(a) In order to demonstrate compliance with Condition D.1.8, the Permittee shall install, calibrate, maintain, and operate a continuous monitoring system for measuring NOx emissions discharged to the atmosphere. The continuous monitoring system shall meet the performance specifications of 326 IAC 3-5-2, and 40 CFR 60.48(b), and 40 CFR 60.13(h). 326 IAC 3-5 is not federally enforceable.

(b) The continuous monitors shall be operated according to Section C - Maintenance of Continuous Emission Monitoring Equipment. In the event that the nitrogen oxide continuous emissions monitor fails, the Permittee shall monitor the oxygen content and temperature once per hour. If the oxygen content or temperature is outside the range established in the latest compliance stack test, 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.1.14 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from stacks S-30, S-90, and S-10 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.1.15 Recuperative Thermal Oxidizers Parametric Monitoring

(a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with the limits in conditions D.1.4 and D.1.5 as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

D.1.16 Recuperative Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTOs (C10 and C11) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,450°F.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with the limits in Conditions D.1 4 and D.1.5, as approved by IDEM.

(c) On and after the date the approved stack test results are available, the Permittee shall operate the Recuperative thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test.

D.1.17 Baghouses Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the hammermilling and scalping, DDGS cooling drum, and DDGS loadout, at least once per day when the process is in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 2.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

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

D.1.18 Particulate Control

(a) Except as otherwise provided by statute, rule, or this permit, the baghouses for PM control shall be in operation and control emissions at all times the associated emission units 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.

D.1.19 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. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

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

D.1.20 Wet Scrubber Parametric Monitoring

The Permittee shall monitor and record the pressure drop and flow rate of the scrubber, S-40 at least once per day when the associated fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 4.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the water flow rate of the scrubber is less than the minimum of 35 gallons per minute (gpm), or a minimum 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 mention range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response

steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The instruments used for determining the pressure drop and flow rate 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.1.21 Scrubber Operation

Except as otherwise provided by statute, rule or this permit, the scrubber shall be operated as needed to maintain compliance with all VOC emission limits.

D.1.22 Flare Pilot Flame

The Permittee shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading rack is in operation and is loading ethanol to trucks and railcars.

Record Keeping and Reporting Requirements

D.1.23 Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 12] [40 CFR 60, Subpart Db]

(a) Pursuant to 326 IAC 2-8-4(3), the Permittee shall record and maintain records of the following information:

(1) To document compliance with Condition D.1.14, the Permittee shall maintain records of daily visible emission notations of the stacks S-30, S-90, and S-10.

(2) To document compliance with Condition D.1.16, the Permittee shall maintain continuous temperature records for the Recuperative Thermal Oxidizers (C-10 and C-11) and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(3) To document compliance with Condition D.1.15, the Permittee shall maintain daily records of the duct pressure or fan amperage for the RTOs (C-10 and C-11).

(4) To document compliance with Condition D.1.17, the Permittee shall maintain records of the pressure drop across the baghouses used in conjunction with the hammermills, scalpers, DDGS cooling drum, and DDGS loadout.

(b) Pursuant to 40 CFR 60.49b(d), the Permittee shall record and maintain records of the amounts of each fuel combusted by the recuperative thermal oxidizers/heat recovery steam generators (C-10 and C-11) during each day and calculate the annual capacity factor individually for natural gas for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(c) Pursuant to 40 CFR 60.49b(g), the Permittee shall maintain records of the following information for each recuperative thermal oxidizer/heat recovery steam generating unit operating day:

(1) Calendar date.

(2) The average hourly nitrogen oxides emission rates (expressed as NO_2) (ng/J or lb/million Btu heat input) measured or predicted.

(3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each recuperative thermal oxidizer/heat recovery steam generating unit operating day from the measured or predicted hourly

nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.

(4) Identification of the recuperative thermal oxidizers/heat recovery steam generating units operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards under 40 CFR 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken.

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.

(7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.

(8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.

(9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(d) To document compliance with D.1.4(g), the Permittee shall maintain records of the number of hours that the biomethanator operates each month.

(e) To document compliance with D.1.4(c), the Permittee shall maintain monthly records of the amount of natural gas and biogas used.

(f) To document compliance with D.1.4(e)(3), the Permittee shall maintain monthly records of the amount of denatured ethanol loaded out from both truck loading rack and railcar loading rack combined.

(g) To document compliance with D.1.4(e)(3), the Permittee shall maintain records of the number of hours that the truck loading rack and railcar loading rack operate each month.

(h) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.24 Reporting Requirements

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

(b) Pursuant to 40 CFR 60.49b(a), the Permittee shall submit notification of the date of initial startup, as provided by 40 CFR 60.7. This notification shall include the information specified in 40 CFR 60.49b(a)(1) through (4).

(c) Pursuant to 40 CFR 60.49b(b), the Permittee shall submit the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B. The Permittee shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.

(d) Pursuant to 40 CFR 60.49b(h), the Permittee shall submit excess emission reports for any excess emissions which occurred during the reporting period.

(e) Pursuant to 40 CFR 60.49b(i), the Permittee shall submit reports containing the information recorded under 40 CFR 60.49b(g) and Condition D.1.23(c).

(f) Pursuant to 40 CFR 60.49b(v), the Permittee may submit electronic quarterly reports for NOx in lieu of submitting the written reports required. The format of each quarterly electronic report shall be coordinated with IDEM, OAQ. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the Permittee shall coordinate with IDEM, OAQ to obtain their agreement to submit reports in this alternative format.

(g) Pursuant to 40 CFR 60.49b(w), the Permittee is required to submit the above reports each six (6) month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

SECTION D.2 FACILITY OPERATION CONDITIONS

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

(b) Grain Terminal with a maximum capacity of 1,172,000 tons of grains per year:

(1) One (1) truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1;

(2) One (1) rail/truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1;

(3) One (1) rail car/truck loading site, constructed in 1974, with no emission controls;

(4) One (1) Berico natural gas-fired dryer, constructed in 1974, with a maximum throughput capacity of 3,000 bushel per hour and a maximum heat input capacity of 16.5 million British thermal units (MMBtu) per hour with screen house enclosure;

(5) One (1) grain cleaner, constructed in 1974, rated at 15,000 bushels per hour with particulate emissions controlled by a baghouse, identified as # 2;

(6) Four million (4,000,000) bushel grain storage capacity with no emission controls;

(7) Four hundred thousand (400,000) bushel grain storage capacity with particulate emissions controlled by a baghouse, identified as # 2;

(8) Two (2) grain legs, constructed in 1974, with a maximum capacity of 7,500 bushel per hour, with particulate emissions controlled by a baghouse, identified as # 2; and

(9) One (1) hopper bottom truck grain receiving process, constructed in 2002, consisting of one (1) enclosed drag conveyor with a maximum design throughput of 1,000,000 bushels of corn and soybeans per year, with particulate emissions controlled by one (1) conveyor enclosure.

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

Emission Limitations and Standards

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

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the hopper bottom truck grain receiving process except when otherwise specified in 40 CFR 60, Subpart DD.

D.2.2 Standards for Particulate Matter (PM) [40 CFR 60.302, Subpart DD]

On and after the 60th day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere any fugitive emission from any individual truck unloading station, railcar unloading station, or railcar loading station, which exhibits greater than five percent (5%) opacity.

D.2.3 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(a) The PM emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Grain Elevator -Receiving	Baghouse #1	0.013
Grain Drying	Screen Enclosure	0.24
Grain Internal Handling	Baghouse #2	0.043

Compliance with these PM limits in combination with the PM emission limits in Condition D.1.4, limits the PM emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable.

(b) The PM10 emissions from the following emission units shall be limited as follows:

Emission Unit/Facility	Control	PM10 Emission Limit (lbs/hr)
Grain Elevator -Receiving	Baghouse #1	0.013
Grain Drying	Screen Enclosue	0.24
Grain Internal Handling	Baghouse #2	0.043

Compliance with these PM10 limits in combination with the PM10 emission limits in Condition D.1.4, limits the PM10 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(c) The grain throughput to the grain elevator shall be limited as follows:

(1) Straight truck controlled pit shall be limited to 2,000,000 bushels per twelve consecutive month period with compliance determined at the end of each month.

(2) Hopper truck and railcar controled pit shall be limited to 37,285,716 bushels per twelve consecutive month period with compliance determined at the end of each month.

(3) Hopper truck uncontrolled pit shall be limited to 1,000,000 bushels per twelve consecutive month period with compliance determined at the end of each month.

Compliance with these limits in combination with PM and PM10 limits in Condition D.1.4, limits the PM and PM10 emissions from the entire source to less than 100 tons per year each, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(d) The NOx emissions from the 16.5 million British thermal units per hour (MMBtu/hr) grain dryer shall not exceed 100 pounds per million cubic feet (lb/MMCF) and the CO emissions shall not exceed 84 pounds per million cubic feet (lb/MMCF) when using natural gas. Natural gas fuel usage shall be limited to 42,900,000 cubic feet per twelve consecutive month period with compliance determined at the end of each month.

The 16.5 million British thermal units per hour (MMBtu/hr) grain dryer shall only combust natural gas as fuel.

Compliance with these limits in combination with the limit in Condition D.1.4, limits the NOx and CO emissions from the entire source to less than 100 tons per year for each pollutant, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not be applicable.

D.2.4 Particulate Emission Limits [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the PM emission from the following emission units shall be limited as follows:

(1) The Berico grain dryer shall not exceed 49.65 pounds per hour when operating at a process weight rate of 84 tons per hour.

(2) The grain elevator, including the internal operations shall not exceed 54.2 pounds per hour at a process weight rate of 133.7 tons per hour

The pound per hour limitations shall be calculated using the following equation:

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 is pounds per hour and

D.2.5 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 any control devices.

Compliance Determination Requirements

D.2.6 Particulate Matter and Particulate Matter Less Than Ten Microns (PM10) Control

In order to comply with Conditions D.2.3 and D.2.4, the baghouses shall be in operation at all times the grain elevator is in operation.

D.2.7 Testing Requirements [326 IAC 2-2] [326 IAC 2-8-5(a)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.2.3, and D.2.4, the Permittee shall perform PM and PM10 stack tests. PM/PM0 tests shall include emission rates, and control efficiency of the baghouses. These tests shall beconducted within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. The PM and PM10 tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.2.8 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from stack #1 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.2.9 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain elevator at least once per day when the process is in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 2.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

D.2.10 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 shutdown immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

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

Record Keeping and Reporting Requirements

D.2.11 Record Keeping Requirements

(a) To document compliance with Condition D.2.8, the Permittee shall maintain records of all daily visible emission notations of the stack #1.

(a) To document compliance with Condition D.2.9, the Permittee shall maintain records of the pressure drop across the baghouses used in conjunction with the grain elevator.

(c) To document compliance with Condition D.2.3(c), the Permittee shall maintain records of the grain throughput to the elevator.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.2.12 Reporting Requirements

A monthly summary of the information to document compliance with Condition D.2.3 shall be submitted quarterly to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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SECTION D.3 FACILITY OPERATION CONDITIONS

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

(14) One (1) 300 horsepower (Hp) diesel-fired emergency pump, identified as EP-110.

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

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

D.3.1 Prevention of Significant Deterioration (PSD) and Part 70 Operating Permit [326 IAC 2-2] [326 IAC 2-8]

(a) The NOx emissions from the 300 horsepower (Hp) diesel-fired emergency pump shall be limited to 8.92 pounds per hour and the operation of this pump shall be limited to 500 operating hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The sulfur content of the diesel fuel used by the emergency pump shall be limited to a maximum of 0.5%.

Compliance with these limits in combination with the NOx limits in Conditions D.1.4 and D.2.3, limit the NOx emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 Operating Permit not applicable.

D.3.2 Record Keeping Requirements

(a) To document compliance with Condition D.3.1, the Permittee shall maintain records of the number of hours that the emergency pump operates each month, and the sulfur content of the fuel used each month.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.3 Reporting Requirements

The monthly hours of operation of the emergency pump shall be submitted quarterly to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or its equivalent, within thirty (30) days after the end of the six (6) month period being reported. The report submitted by the Permittee does require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1.

SECTION D.4 FACILITY CONDITIONS

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

(16) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-2 that will store 190 proof ethanol with a capacity of 225,000 gallons.

(17) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-3 that will store 200 proof ethanol with a capacity of 225,000 gallons.

(18) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-4 that will store natural gasoline with a capacity of 91,000 gallons.

(19) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-5 that will store denatured ethanol with a capacity of 2,114,000 gallons.

(20) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-6 that will store denatured ethanol with a capacity of 750,000 gallons.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.4.1 Permit No Defense

This permit 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.

Effective Date of the Permit

D.4.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.4.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

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

D.4.4 Volatile Organic Compounds (VOC) [326 IAC 8-4]

Pursuant to 326 IAC 8-4-3, (Petroleum Liquid Storage Facilities), the following requirements shall be applicable to Tank-4.

(a) Tank-4 shall be retrofitted with an internal floating roof equipped with a closure seal, or seals, to close the space between the roof edge and tank wall unless the source has been retrofitted with equally effective alternative control which has been approved.

(b) Tank-4 shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.

(c) All openings, except stub drains, are equipped with covers, lids, or seals such that:
(1) the cover, lid, or seal is in the closed position at all times except when in actual use;
(2) automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
(3) rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

Record Keeping and Reporting Requirements

D.4.5 Record Keeping Requirements

(a) The Permittee shall maintain records of the types of volatile petroleum liquid stored , the maximum true vapor pressure of the liquid as stored, and the results of the inspection performed on Tank-4. Such records shall be maintained for a period of two (2) years and shall be made available to the IDEM, OAQ upon written request.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION E.1 FACILITY OPERATION CONDITIONS

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

(16) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-2 that will store 190 proof ethanol with a capacity of 225,000 gallons.

(17) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-3 that will store 200 proof ethanol with a capacity of 225,000 gallons.

(18) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-4 that will store natural gasoline with a capacity of 91,000 gallons.

(19) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-5 that will store denatured ethanol with a capacity of 2,114,000 gallons.

(20) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-6 that will store denatured ethanol with a capacity of 750,000 gallons.

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

New Source Performance Standards (NSPS) Requirements

E.1.1 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR 60, Subpart Kb.

E.1.2 Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) [40 CFR Part 60, Subpart Kb]

The following requirements under 40 CFR Part 60, Subpart Kb shall apply to Tank-2, Tank-3, Tank-4, Tank-5, and Tank-6:

§ 60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in §60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

(a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively,

this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in §60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of §60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with §60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §61.112b(a)(1) or §60.113b(a)(3) and list each repair made.

§ 60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

SECTION E.2 FACILITY OPERATION CONDITIONS

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

Ethanol Production Plant:

(a) Ethanol Production Plant with a maximum production rate of 110,000,000 gallons of ethanol per year:

(1) One (1) day bin with a maximum throughput of 7,500 bushels per hour.

(2) One (1) grain scalper, with a maximum throughput of 1,100,000 tons per year controlled by baghouse S-30.

(3) Four (4) hammermills each with a maximum throughput of 100 tons per hour controlled by baghouse S-30.

(4) One (1) cook water tank with a capacity of 374,000 gallons.

(5) One (1) slurry mixer receiver (blend) tank with a capacity of 470 gallons. The emissions from this tank will be exhausted indirectly to the two Recuperative Thermal Oxidizers (RTOs) (C-10 and C-11) through the slurry tanks.

(6) Two (2) slurry tanks each has a capacity of 25,000 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(7) Two (2) cook tubes each with a capacity of 5,200 gallons.

(8) One flash tank with a capacity of 4,500 gallons.

(9) One syrup tank with a capacity of 180,000 gallons.

(10) One fermentation process, with a maximum throughput of 13,000 gallons per hour, controlled by CO_2 scrubber S-40, which includes:

(A) Seven (7) fermenters, each with a capacity of 807,000 gallons.
(B) Two (2) liquefaction tanks each with a capacity of 128,400 gallons.
(C) Two (2) yeast tanks each with a capacity of 13,500 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(11) One distillation and evaporation process controlled by the two RTOs (C-10 and C-11) with a maximum throughput of 1,100,000 tons per year consisting of the following:

(A) One (1) beerwell with a capacity of 1,080,000 gallons.
(B) One beer column.
(C) One side stripper.
(D) Six (6) molecular sieve condensers.
(E) Six (6) centrifuges.
(F) Two (2) centrate tanks with a capacity of 1,690 gallons each.
(G) Eight (8) evaporators.
(H) One (1) stillage tank with a capacity of 374,000 gallons.

(12) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 43 tons per hour, controlled by the two RTOs (C-10 and C-11). This process consists of the following:

(A) Four (4) DDGS dryers, identified as Dryers A, B, C, and D, each dryer has a heat input capacity of 45 MMBtu/hr or a total heat input capacity of 180 MMBtu/hr, with a total drying rate of 356,880 tons of DDGS per year.
(B) One (1) DDGS cooling drum with a maximum throughput of 356,880 tons of DDGS per year, controlled by a baghouse, identified as S-70.
(C) One (1) four cell cooling tower with a circulation rate of 3,000,000 gallons per hour.
(D) One DDGS truck/rail loadout with a maximum capacity of 500 tons per hour, controlled by a baghouse, identified as S-90.

(13) Ethanol loading racks with a total maximum throughput of 110,000,000 gallons per year of ethanol, consisting of the following:

(A) One (1) ethanol truck loading rack, utilizing submerged loading only. The truck loading process is controlled by an enclosed flare with a heat input capacity of 6.4 million British thermal units per hour (MMBtu/hr).
(B) One (1) ethanol railcar loading rack, utilizing submerged loading only. The railcar loading process is controlled by an enclosed flare with a heat input capacity of 6.4 MMBtu/hr.

(14) Two (2) Recuperative Thermal Oxidizers (RTOs)/heat recovery steam generators, identified as C-10 and C-11, using natural gas and process waste gases, each with a maximum heat input capacity of 122 MMBtu/hr.

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

E.2.1 40 CFR 60, Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

§ 60.482-2 Standards: Pumps in light liquid service.

(a) Each pump in light liquid service shall

(1) be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in §60.482-1(c) and paragraphs (d), (e), and (f) of this section.

(2) be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b) (1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a), provided the following requirements are met:

(1) Each dual mechanical seal system is -

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482-10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5) (i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm, and

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6) (i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii), a leak is detected.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.

(iii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any pump that is designated, as described in §60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482-10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

§ 60.482-4 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485(c).

(b) (1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482-9.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482–10 is exempted from the requirements of paragraphs (a) and (b) of this section.

(d) (1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482–9.

§ 60.482-5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in §60.482–1(c). Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482–10; or

(4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(b) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

§ 60.482-6 Standards: Open-ended valves or lines.

(a) (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482–1(c).

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

§ 60.482-7 Standards: Valves in gas/vapor service and in light liquid service.

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), §60.483–1, 2, and §60.482–1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c) (1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d) (1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in §60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in §60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either becomes an affected facility through §60.14 or §60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

§ 60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is ` detected.

(d) First attempts at repair include, but are not limited to, the best practices described under §60.482–7(e).

§ 60.482-9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

§ 60.482-10 Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of §60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual inspections according to the procedures in §60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in §60.486(c).

(4) For each inspection conducted in accordance with §60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

§ 60.483-1 Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with §60.482–7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(c) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent

§ 60.483-2 Alternative standards for valves—skip period leak detection and repair.

(a) (1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d).

(b) (1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7 but can again elect to use this section.

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

§ 60.485 Test methods and procedures.

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

(b) The owner or operator shall determine compliance with the standards in §§60.482, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in §§60.482–2(e), 60.482–3(i), 60.482–4, 60.482–7(f), and 60.482–10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units) = 28.56 ft/sec (English units)

K_2 = 0.7084 m^4 /(MJ-sec) (metric units) = 0.087 ft^4 /(Btu-sec) (English units)

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i-1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^{7} (g-mole)(MJ)/ (ppm-scm-kcal) (metric units) = 4.674×10^{8} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = Concentration of sample component "i," ppm

H_i = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

(5) Method 18 and ASTM D2504–67, 77, or 88 (Reapproved 1993) (incorporated by reference—see §60.17) shall be used to determine the concentration of sample component "i."

(6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference—see §60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity

§ 60.486 Recordkeeping requirements.

(a) (1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(b) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482–7(c) and no leak has been detected during those 2 months.

(3) The identification on equipment except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) Above 10,000" if the maximum instrument reading measured by the methods specified in §60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.

(5) Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(9) The date of successful repair of the leak.

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482–10 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in §60.482–10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5.

(e) The following information pertaining to all equipment subject to the requirements in §§60.482–1 to 60.482–10 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2) (i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2(e), 60.482–3(i) and 60.482–7(f).

(ii) The designation of equipment as subject to the requirements of §60.482–2(e), §60.482–3(i), or §60.482–7(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4.

(4) (i) The dates of each compliance test as required in §§60.482–2(e), 60.482–3(i), 60.482–4, and 60.482–7(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(f) The following information pertaining to all valves subject to the requirements of §60.482–7(g) and (h) and to all pumps subject to the requirements of §60.482–2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with §60.483–2:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§60.482–2(d)(5) and 60.482–3(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of §60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
CERTIFICATION

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023

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 BRANCH
100 North Senate Avenue
Indianapolis, Indiana 46204-2251
Phone: 317-233-5674
Fax: 317-233-5967

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16

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

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

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

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

Form Completed by: _____
Title / Position: _____
Date: _____
Phone: _____

A certification is not required for this report.

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

FESOP Quarterly Report

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023
Facility: RTOs & DDGS, Grain Dryer, and Emergency Pump
Parameter: NOx Emissions
Limit: RTOs - 51 lb/MMCF and 2,137.4 MMCF of natural gas per 12 months
Grain Dryer - 100 lbs/MMCF and 42,900,000 cubic feet natural gas per 12 months
300 HP Emergency Pump – 500 operating hours per 12 months
DDGS Dryers - 51 lbs/MMCF and 1,550.5 MMCF of natural gas per 12 months When using biogas as fuel every 1.17 cubic feet is equivalent to 1 cubic foot of natural gas.

QUARTER: _____YEAR:_____

Table 1 – RTOs Limit - 51 lb/MMCF and 2,137.4 MMCF of natural gas per 12 month period **Page 1 of 3**

Month	Column 1		Column 2		Column 1 + 2	
	Natural Gas Usage (MMCF)	Equivalent NOx Emissions	Previous 11 Months		12 Month Total	
			Natural Gas Usage (MMCF)	Equivalent NOx Emissions	Natural Gas Usage (MMCF	Equivalent NOx Emissions
Month 1						
Month 2						
Month 3						

Methodology:
NOx Emissions, tons/yr = Ef, lb/MMCF * MMCF nat. gas usage/month *12 mos/yr * ton/2000 lb

Table 2 – Grain Dryer' Limit - 100 lbs/MMCF and 42,900,000 cubic feet natural gas per 12 month period

Month	Column 1		Column 2		Column 1 + 2	
	Natural Gas Usage (MMCF)	Equivalent NOx Emissions	Previous 11 Months		12 Month Total	
			Natural Gas Usage (MMCF)	Equivalent NOx Emissions	Natural Gas Usage (MMCF	Equivalent NOx Emissions
Month 1						
Month 2						
Month 3						

Methodology:
NOx Emissions, tons/yr = N. Gas usage, MMCF/mo * 100 lb/MMCF * ton/2000 lb

DRAFT

Table 3 – 300 Hp Emergency Pump Limit - 500 operating hours per twelve month period **Page 2 of 3**

Month	Column 1		Column 2		Column 1 + 2	
	Hours Operated	Equivalent NOx Emissions	Previous 11 Months		12 Month Total	
			Hours Operated	Equivalent NOx Emissions	Hours Operated	Equivalent NOx Emissions
Month 1						
Month 2						
Month 3						

Methodology:
NOx Emissions, tons/yr = 300 HP * Ef, 0.0310 lb/HP-hr * hours operated/month * 12 months/yr.

Table 4 - DDGS Dryers Limit - 51 lbs/MMCF and 1,550.5 MMCF of natural gas per 12 month period

Month	Fuel Type	Natural Gas Usage This Month (MMCF)	Equivalent Natural Gas Usage This Month (MMCF)	TOTAL Natural Gas This Month (MMCF)	Equivalent NOx Emissions This Month	Natural Gas Usage for Previous 11 Months (MMCF)	Equivalent Natural Gas Usage for Previous 11 Months (MMCF)	TOTAL Natural Gas Usage for Previous 11 Months (MMCF)	Equivalent NOx Emissions Previous 11 Months	Natural Gas Usage 12 Month Total	Equivalent Natural Gas Usage 12 Month Total	TOTAL Natural Gas Usage 12 Month Total	Equivalent NOx Emissions 12 Month Total
1													
2													
3													

Note: For every 1.17 cubic feet of biogas is equivalent to 1 cubic foot of natural gas.

Table 5 – Biomethanator Flare Limit - 500 operating hours per twelve month period

Month	Column 1		Column 2		Column 1 + 2	
	Hours Operated	Equivalent NOx Emissions	Previous 11 Months		12 Month Total	
			Hours Operated	Equivalent NOx Emissions	Hours Operated	Equivalent NOx Emissions
Month 1						
Month 2						
Month 3						

Methodology:
Emissions, tons/yr = heat input, MMBtu/hr * Ef, flaring + pilot * hours operated/month *

Table 6 – Total NOx Emissions from Table 1 to Table 5 **Page 3 of 3**

Month	Column 1	Column 2	Column 1 + 2
	Total NOx This Month	Total NOx Previous 11 Months	Total NOx 12 Month
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter. _____

☐ Deviation/s occurred in this quarter. _____

☐ Deviation has been reported on:_____

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023
Facility: Loading Racks (Trucks and Railcars Combined)
Parameter: VOC Emissions
Limit: 110,000,000 million gallons per twelve month period.

QUARTER: _____YEAR:_____

Month	Column 1	Column 2	Column 1 + 2
	Ethanol Loaded This Month	Ethanol Loaded Previous 11 Months	Ethanol Loaded Total 12 Months
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter. _____

☐ Deviation/s occurred in this quarter. _____

☐ Deviation has been reported on:_____

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023
Facility: Loading Racks (Truck and Railcars Combined)
Parameter: VOC Emissions
Limit: 1690 operating hours per twelve month period.

QUARTER: _____YEAR:_____

Month	Column 1	Column 2	Column 1 + 2
	Hours Operated This Month	Hours Operated Previous 11 Months	Hours Operated Total 12 Months
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter. _____

☐ Deviation/s occurred in this quarter. _____

☐ Deviation has been reported on:_____

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023
Facility: RTOs & DDGS
Parameter: SO_2 Emissions
Limit: 0.45 lb/ton DDGS dried and
DDGS Dried at 356,880 tons per twelve month period.

QUARTER: _____YEAR:_____

Month	Column 1	Column 2	Column 1 + 2
	DDGS Dried This Month	DDGS Dried Previous 11 Months	DDGS Dried Total 12 Months
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter. _____

☐ Deviation/s occurred in this quarter. _____

☐ Deviation has been reported on:_____

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

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

COMPLIANCE DATA SECTION

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)

FESOP Quarterly Report

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: County Roads 300S and 350 W, Logansport, IN 46947
NSR/FESOP No.: 017-21536-00023
Facility: Grain Dryer
Parameter: CO Emissions
Limit: 84 pounds of CO per MMCF and
42,900,000 cubic feet of natural gas per twelve month period.

Month	Column 1	Column 2	Column 1 + 2
	Natural Usage This Month	Natural Usage Previous 11 Months	Natural Usage Total 12 Month
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter. _____

☐ Deviation/s occurred in this quarter. _____

☐ Deviation has been reported on:_____

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023
Facility: Grain Elevator
Parameter: PM and PM10 Emissions
Limits: Straight truck controlled pit – 2,000,000 bushels per twelve month period.
Hopper truck and railcar controlled pit – 37,285,716 bushels per twelve month period.
Hopper truck uncontrolled pit – 1,000,000 bushels per twelve month period.

QUARTER: _____ YEAR: _____

Month	Column 1			Column 2			Column 1 + 2		
	Grain Handled This Month			Grain Handled Previous 11 Months			Grain Handled 12 Months		
	Straight truck controlled pit	Hopper truck and railcar controlled pit	Hopper truck uncontrolled pit	Straight truck controlled pit	Hopper truck and railcar controlled pit	Hopper truck uncontrolled pit	Straight truck controlled pit	Hopper truck and railcar controlled pit	Hopper truck uncontrolled pit
Month 1									
Month 2									
Month 3									

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

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

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

COMPLIANCE DATA SECTION

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

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: County Roads 300S and 350 W, Logansport, IN 46947
NSR/FESOP No.: 017-21536-00023

Months: _____ **to** _____ **Year:** _____

Page 1 of 2

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

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

Page 2 of 2

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

Form Completed By: ________________________________

Title/Position: ________________________________

Date: ________________________________

Phone: ________________________________

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document for a New Source Construction and a Federally Enforceable State Operating Permit (FESOP)

Source Name:	Andersons Clymers Ethanol, LLC
Source Location:	County Roads 300S and 350W, Logansport, IN 46947
County:	Cass
SIC Code:	3011
NSR/FESOP:	017-21536
Plant ID:	017-00023
Permit Reviewer:	Aida De Guzman

On November 9, 2005, the Office of Air Quality (OAQ) had a notice published in the Pharos Tribune, Logansport, Indiana, stating that Andersons Clymers Ethanol, LLC had applied for a New Source Construction and a Federally Enforceable State Operating Permit (FESOP) to construct a new ethanol plant with various control equipment to limit the amount of pollution that can be released into the atmosphere. The notice also stated that OAQ proposed to issue a permit 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.

On December 9, 2005, Andersons Clymers Ethanol, LLC submitted the following comments to the proposed New Source Construction and FESOP (additions are **bolded** and deletions are ~~struck-through~~ for emphasis):

Comment 1: Section A.1, Authorized Individual should read as follows:
Authorized Individual: Stacey Schmidt, Director – Hazard Management & Engineering

Response 1: Section A.1 has been revised as requested. IDEM has deleted Emission Offset under Source Status because the source is located in a county that is attainment for all criteria pollutants. The revisions are as follows:

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

The Permittee owns and operates a grain terminal and an ethanol production plant.

Authorized Individual:	Stacey Schmidt, Director - ~~Safety Health and Environmental Protection~~ **Hazard Management & Engineering**
Source Address:	County Road 300 S and 350 W, Logansport, IN 46947
Mailing Address:	P.O. B ox 119, Maumee, Ohio 43537
General Source Phone:	(419) 891-2957
SIC Code:	2869, 5153
Source Location Status:	Cass Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD ~~Emission Offset~~ **rules** Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

Comment 2: Condition B.12(a) – PMP should not be required until 90 days after initial start up of the ethanol plant.

Response 2: The Andersons Clymers proposed FESOP already included a provision to request for an extension, if the Permittee cannot prepare the PMP within the ninety (90) day timeframe. No change has been made to Condition B.12.

Comment 3 C.12 Compliance Monitoring Requirements – New monitoring and record Keeping requirements (above those already required for existing grain elevator) should not be required until 90 days after initial startup of the ethanol plant.

Response 3: The Compliance Monitoring Requirements required under the MSOP 017-20237-00023, issued on June 20, 2005 for the grain elevator will transition to the Compliance Monitoring required under the FESOP 017-21536-00023. The intention of the FESOP is to permit the existing source that is already in operation. For new emission units compliance monitoring and record keeping starts upon operation. Therefore, since the ethanol plant is not yet in operation, monitoring and record keeping shall be implemented when operation begins. Conditions C.12 has been revised as follows:

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

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented ~~within ninety (90) days of permit issuance~~ **when operation of the ethanol plant begins.** If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated ~~within ninety (90) days~~ **when operation of the ethanol plant begins,** the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

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

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

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

Comment 4: Section (e) of Condition C.19 – The first report should cover the period commencing on the date of initial startup of the ethanol plant.

Response 4: IDEM recognizes that Andersons Clymers is an existing source and therefore, the reporting requirements in Section (e) of Condition C.19 would not be applicable to the entire source because the new ethanol plant has not yet operated. Therefore, Section (e) of Condition C.19 General Reporting Requirements has been revised to account for the new ethanol plant as follows:

C.19 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "authorized individual" as defined by 326 IAC2-1.1-1(1).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) The first report shall cover the period commencing on the date of ~~issuance of the original FESOP~~ **initial startup of the ethanol plant** and end on the last day of the reporting period. All subsequent reporting periods shall be 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.

Comment 5: In Condition D.1.4, the Cooling Drum is controlled by baghouse S-70, and the DDGS loadout is controlled by baghouse S-90.

Response 5: This is a typographical error. Condition D.1.4 has been corrected by separating the PM limit for Cooling Drum and DDGS Storage/Loadout. No increase in the limits will result from separating the two emission units because the total PM and PM10 limits were based on the controlled emissions. The changes are as follows:

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(a) The PM emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Hammermill ~~and~~ Scalping**, and Grain Handling to Ethanol Day Bin** ~~operation~~	Baghouse S-30	~~3.3~~ **4.1**
~~Cooling Drum and~~ DDGS Storage/Loadout	Baghouse S-90	~~1.71~~ **0.98**
Cooling Drum	**Baghouse S-70**	**0.73**
DDGS Dryer	RTOs C-10&C-11	6.9

Compliance with these PM limits in combination with the PM emission limits in Condition D.2.3, limits the PM emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable.

(b) The PM10 emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM10 Emission Limit (lbs/hr)
Hammermill ~~and~~ Scalping**, and Grain Handling to Ethanol Day Bin** ~~operation~~	Baghouse S-30	~~1.66~~ **2.09**
~~Cooling Drum and~~ DDGS Storage/Loadout	Baghouse S-90	~~1.06~~ **0.33**
Cooling Drum	**Baghouse S-70**	**0.73**
DDGS Dryer	RTOs C-10&C-11	6.9

Compliance with these PM10 limits in combination with the PM10 emission limits in Condition D.2.3, limits the PM10 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

Comment 6: Condition D.1.5a –The overall VOC control efficiency, which includes capture and absorption efficiencies, for the wet scrubber S-40 shall be at least 95%.

Over the last several years, the United States Environmental Protection Agency (USEPA) along with over fourteen state and local environmental agencies, including the Indiana Department of Environmental Management (IDEM), have engaged in a special enforcement effort focused on improving air quality by controlling emissions from a number of ethanol production and other grain processing facilities. Multiple consent decrees covering what USEPA estimates to be 81 percent of uncontrolled ethanol production capacity will now require ethanol plants to install air pollution control technologies to reduce emissions. In addition, the new technology standards established by this initiative apply to all ethanol plants now under construction.

The VOC control standard applied in every one of these consent decrees is consistent at 95%. The attachment summarizes the consent decrees and the VOC control standards for each affected piece of process equipment within each of the affected facilities. In the case of every scrubber and every ethanol fermentation process (highlighted in yellow), the VOC control limit was set at either 95%, 10- 20 ppm, or some alternate limit determined after performance testing.

By requiring the Clymers project to meet a 98% VOC control limit, it forces a distinct and significant burden on one plant while others in the same industry, including those in Indiana, are being held to the 95% level. Granta Y. Nakayama, USEPA's Assistant Administrator for the Office of Enforcement and Compliance Assurance, indicated in a USEPA / Department of Justice press release that the consent decrees "will improve the environment and at the same time create a level playing field in the industry." Clearly, this would not be the case if the Clymers project were held to the 98% control limit that is currently written into the draft permit. Such an approach would neither be consistent nor fair.

We noted in the BACT analysis submitted with our permit application that the control technologies chosen for the fermentation process, DDGS drying, distillation and

evaporation, and ethanol loadout were all expected to achieve 98% VOC control or better. We still have this expectation and have not considered changing our control methodologies based on the 95% limit standard established by the consent decrees. However, we believe it is most appropriate for IDEM to be consistent and fair in their approach to the Clymers project. In particular, our design / build contractor feels very strongly that anything higher than a 97% VOC control limit on the fermentation scrubber will put us at risk of instantaneous exceedences without completely redesigning the water use and wastewater recycling balances for the entire process. Thus, the small incremental improvement in VOC control on the fermenters would even further widen the competitive disadvantage for the Clymers project and might run the risk of eliminating the zero process water discharge status the design currently incorporates. In the grand scheme, this would not be protective of the environment.

Cooling cyclones: VOC emission limits shall be established after initial performance testing.

Ethanol loadout: Design a truck loadout enclosure for total capture of VOC and operate a closed loop system vented to a flare for destruction of the captured VOC.

Condition D.1.5b- The overall VOC control efficiency, which includes capture and destruction efficiencies for each of the two recuperative thermal oxidizers (C-10 and C-11) shall be at least 95%.

Condition D.1.5c – The overall efficiency for the enclosed flare (including the capture efficiency and destruction efficiency) shall be at least 95% or otherwise ensure destruction of captured VOC.

Condition D.1.5d – The overall control efficiency, which includes capture and destruction efficiencies, for each of the two recuperative thermal oxidizers(C-10 and C-11) shall be at least 95%.

Response 6: The IDEM follows the NSR guidance for 40 CFR Part 52.21(b)(12) and 326 IAC 2-2, in making BACT determinations. Several factors are considered which include the selection of emission limitations, control techniques, and control technologies that are specific to a particular facility. In reaching this facility specific result, the emission limitations achieved by other facilities and corresponding control technologies used at other facilities are an important source of information in determining what constitute best available control technology.

The essence of the BACT determination process as described in the NSR guidance is to look for the most stringent emission limits achieve in practice at similar facilities and to evaluate the technical feasibility of implementing such limits and/or control technologies for the project under consideration.

The EPA consent decree or settlements reached with several ethanol plants was to reduce VOC emissions by at least 95% VOC. These settlements were not based on BACT determinations.

Most companies mentioned in ATTACHMENT B CONTROL TECHNOLOGY / BACT ANALYSIS of the proposed permit are achieving 98% control efficiency for each process control equipment (fermentation wet scrubber, distillation and evaporation thermal oxidizers, DDGS dryers thermal oxidizers, and ethanol loadout flare). IDEM cannot require a less stringent BACT for The Andersons Clymers than what is established as BACT for these types of operations. IDEM and other states have issued permits to some sources that established the BACT at 98% control efficiency.

No changes have been made to the permit as a result of this comment.

Comment 7: Please add the word "enclosed" in Condition D.1.12 – Testing shall include emission rates and overall control efficiency (capture and destruction / absorption efficiencies) of the RTOs / heat recovery steam generators, scrubber, enclosed flare and baghouses.

Response 7: Condition D.1.12 has been revised as requested. This condition has also been revised to require testing only for the major HAP from this source (Acetaldehyde):

D.1.12 Testing Requirements [326 IAC 2-2] [326 IAC 2-8-5(a)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.4, D.1.5, and D.1.6, the Permittee shall perform PM, PM10, VOC, CO, NOx, SO_2, and ~~HAP~~ **Acetaldehyde** stack tests. PM/PM10 and VOC testing shall include emission rates, and overall control efficiency (capture and destruction/absorption efficiencies) of the RTOs/heat recovery steam generators, scrubber, **enclosed** flare, and baghouses. These tests shall be conducted within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensable PM-10. The PM, PM10, VOC, CO, NOx, SO_2, and ~~HAP~~ **Acetaldehyde** tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Comment 8: Please correct the typographical error in the **SECTION D.2 FACILITY** description box as follows: One (1) truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1.

Response 8: SECTION D.2 FACILITY has been revised as requested:

SECTION D.2 FACILITY OPERATION CONDITIONS

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

(b) Grain Terminal with a maximum capacity of 1,172,000 tons of grains per year:

(1) One (1) truck dump hopper, constructed in 1974, enclosed on ~~3~~ **2** sides with particulate emissions controlled by a baghouse, identified as # 1;

(2) One (1) rail/truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1;

(3) One (1) rail car/truck loading site, constructed in 1974, with no emission controls;

(4) One (1) Berico natural gas-fired dryer, constructed in 1974, with a maximum throughput capacity of 3,000 bushel per hour and a maximum heat input capacity of 16.5 million British thermal units (MMBtu) per hour with screen house enclosure;

(5) One (1) grain cleaner, constructed in 1974, rated at 15,000 bushels per hour with particulate emissions controlled by a baghouse, identified as # 2;

(6) Four million (4,000,000) bushel grain storage capacity with no emission controls;

(7) Four hundred thousand (400,000) bushel grain storage capacity with particulate emissions controlled by a baghouse, identified as # 2;

(8) Two (2) grain legs, constructed in 1974, with a maximum capacity of 7,500 bushel per hour, with particulate emissions controlled by a baghouse, identified as # 2; and

(9) One (1) hopper bottom truck grain receiving process, constructed in 2002, consisting of one (1) enclosed drag conveyor with a maximum design throughput of 1,000,000 bushels of corn and soybeans per year, with particulate emissions controlled by one (1) conveyor enclosure.

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

Comment 9: Please make the following correction in the Technical Support Document:

On Page 12, paragraph (a)(1)(C) – The overall VOC control efficiency, which includes capture and absorption efficiencies, for the wet scrubber shall be at least 95%.

On Page 12, paragraph (a)(2)(C) – The overall VOC control efficiency, which includes capture and destruction efficiencies, foe each of the two recuperative thermal oxidizers (C-10 & C-11) shall be at least 95%.

On Page 12, paragraph (a)(3)(B) - The overall efficiency for the enclosed flare (including the capture efficiency and destruction efficiency) shall be at least 95% or otherwise ensure destruction of captured VOC.

On Page 13, paragraph (a)(4)(B) – The overall control efficiency, which includes capture and destruction efficiencies, for each of the two recuperative thermal oxidizers (C-10 & C-11) shall be at least 95%.

Response 9: This TSD Addendum is part of the TSD. It serves to address the changes made in the permit as a result of the submitted comments. IDEM, OAQ prefers not to change the TSD in order to preserve the original information from the issued permit.

The 98% overall control established as BACT from each of the Andersons Clymers control equipment is consistent with recent BACT determinations, and IDEM cannot require a less stringent BACT than what was already established as BACT for this type of operation. See Response 6 of this TSD Addendum. Therefore, no change has been made to the original TSD.

On December 8, 2005, Charles L. Berger of Berger and Berger, on behalf of Plumbers and Steamfitters, Local 172, submitted comments on the proposed FESOP. A summary of the comments and responses are as follows:

Comment 1: Best Available Control Technology (BACT) is required for new facilities which have potential emissions of VOCs of 25 ton/yr or more. 326 IAC 8-1-6. The Technical Support Document (TSD) indicates that BACT is required for the fermentation process, dried distillers grain and solubles ("DDGS") dryers, the ethanol loading rack, and distillation and evaporation. TSD, PP. 12-13.

Ethanol Loading Rack Flare

The facility will import natural gasoline to blend with ethanol, producing denatured ethanol. Loading denatured ethanol into rail cars and tanker trucks releases vapors containing VOCs. AP-42, p. 5.2-1. These vapors are controlled using various loading methods, e.g., submerged with dedicated vapor balance, and by routing the released vapors to a flare. AP-42, pp. 5.2-5 to 5.2-6. BACT is required for ethanol 0 operations. 326 IAC 8-1-6. The Permit does not require BACT for VOC emissions during either railcar or truck loading.

First, the TSD, Appendix A, page 10, states that only truck loading is controlled by a flare while the Permit suggests that both truck and rail car loadout vapors will be controlled by the flare. The response to comments should clarify which is correct. If the rail car vapors are not controlled by the flare, BACT for VOCs would not be satisfied.

Second, during truck loading, BACT is the use of a flare with an overall control efficiency for the vapor collection system of at least 98% and VOC emissions of 2.03 lb/hr. Permit, Sec. D.1.4(d), p. 28. The uncontrolled VOC emissions of 1.08 lb/kgal assumes the loading rack will use submerged loading. TSD, Appx. A, p. 10 and AP-42, Table 5.2-1 (S factors of 0.5 - 0.6 correspond to submerged loading). If splash loading or vapor balance service were used, which would be allowed under this Permit, the VOC emissions would be much higher. Exceedance of the VOC limit would not be detected because monitoring is infrequent. Thus, the Permit should be revised to require the use of submerged loading and recordkeeping to report the type of loading used.

Third, the proposed VOC emission limit of 2.03 lb/hr does not correspond to 98% VOC control and thus is not BACT. The calculations in the TSD, Appendix A are incorrect. The facility produced 110,000,000 gallons per year of denatured ethanol. The loading rack is limited to 1600 hr/yr. Permit, Sec. D.1.4(d)(3), p. 28. Thus, the facility can load up to 68.75 kgal/hr. Using the emission factor of 1.08 lbs/kgal, this corresponds to a VOC emission rate of 1.485 lb/hr. The permit should be revised to limit VOC loading emissions to 1.485 lb/hr.

Response 1: Loadout of denatured ethanol will be performed at two separate loading racks, truck loading and railcar loading. The emissions from the loading racks on Page 10 of 14, now Page 10 of 15 of the TSD App A have been recalculated to show the uncontrolled VOC emissions from the truck loading rack. Since the potential VOC emissions from the railcar loading rack and truck loading rack are each greater than 25 tons per year, they will both be subject to 326 IAC 8-1-6 (BACT). Both the railcar loading rack and the truck loading rack will be controlled by an enclosed flare which is BACT. IDEM also agrees that the permit should contain a condition that mandates submerged loading for both truck and railcar loading, which the source intends to use.

The proposed VOC emission limit of 2.03 lb/hr has been changed to 2.70 lbs/hr which is calculated as follows:

Trucks and railcars VOC Emissions limit = 2.00 ton/yr based on 4.23 lb/kgal for the truck and 0.43 lbs/kgal for the rail
Combustion Emission = 0.28 ton/yr based on 0.052 lb/MMBtu (AP-42 Table 3.5-1)
Total VOC Emissions limit = 2.28 tons /yr, which is equals to 2.70 lb/hr at 1690 hours per year, instead of 1600 hrs/yr

The following changes to SECTION A.2 and SECTION D.1 have been made to reflect these changes (bolded language has been added, the language with a line through it has been deleted):

A.2 Source Definition [326 IAC 2-8-1] [326 IAC 2-7-1(22)]

This stationary source consists of the following plants:

(13) ~~One ethanol truck and railcar~~ **Ethanol** loading rack**s** with a **total** maximum throughput of 110,000,000 gallons per year of ethanol~~, controlled by a natural gas fired flare.~~ **consisting of the following:**

(A) One (1) ethanol truck loading rack, utilizing submerged loading only. The truck loading process is controlled by an enclosed flare with a heat input capacity of 6.4 million British thermal units per hour (MMBtu/hr).

(B) One (1) ethanol railcar loading rack, utilizing submerged loading only. The railcar loading process is controlled by an enclosed flare with a heat input capacity of 6.4 MMBtu/hr.

SECTION D.1 FACILITY OPERATION CONDITIONS

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

(13) ~~One ethanol truck and railcar~~ **Ethanol** loading rack**s** with a **total** maximum throughput of 110,000,000 gallons per year of ethanol, ~~controlled by a natural gas fired flare~~, **consisting of the following:**

(A) One (1) ethanol truck loading rack, utilizing submerged loading only. The truck loading process is controlled by an enclosed flare with a heat input capacity of 6.4 million British thermal units per hour (MMBtu/hr).

(B) One (1) ethanol railcar loading rack, utilizing submerged loading only. The railcar loading process is controlled by an enclosed flare with a heat input capacity of 6.4 MMBtu/hr.

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

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

~~(d)~~ **(e)** The VOC emissions from the following emission units shall be limited as follows:

(1) The VOC emissions from the DDGS Cooling Drum shall be limited to 3 pounds per hour.

(2) The VOC emissions from the fermentation scrubber shall be limited to 7.5 pounds per hour.

(3) The VOC emissions from the **loading racks shall be limited as follows:**

(i) The combined VOC emissions from the truck loading rack and the railcar loading rack shall not exceed 2.70 lbs/hr.

(ii) The truck loading rack and the railcar loading rack shall be limited to a combined throughput of 110,000,000 gallons of ethanol per twelve consecutive month period with compliance determined at the end of each month.

(iii) The truck loading rack and the railcar loading rack shall be limited to 1690 operating hours per twelve consecutive month period with compliance determined at the end of each month.

(iv) The railcar loading rack and the truck loading rack shall utilize only a submerged fill loading system.

~~flare for both truck and rail shall not exceed 2.03 lbs/hr. The loading rack shall also be limited to 1600 operating hours per twelve consecutive month period at be limited to a the maximum loading rates of 600 gpm for trucks and 1200 gpm for railcars.~~

SECTION E.2 FACILITY OPERATION CONDITIONS

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

(13) ~~One ethanol truck and railcar~~ **Ethanol** loading rack**s** with a **total** maximum throughput of 110,000,000 gallons per year of ethanol, ~~controlled by a natural gas fired flare.~~ **consisting of the following:**

(A) One (1) ethanol truck loading rack, utilizing submerged loading only. The truck loading process is controlled by an enclosed flare with a heat input capacity of 6.4 million British thermal units per hour (MMBtu/hr).

(B) One (1) ethanol railcar loading rack, utilizing submerged loading only. The railcar loading process is controlled by an enclosed flare with a heat input capacity of 6.4 MMBtu/hr.

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

D.1.23 Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 12] [40 CFR 60, Subpart Db]

(f) To document compliance with D.1.4(e)(3), the Permitee shall maintain monthly records of the amount of denatured ethanol loaded out at the truck loading rack and the railcar loading rack combined.

(g) To document compliance with D.1.4(e)(3), the Permittee shall maintain records of the number of hours that the truck loading rack and railcar loading rack operate each month.

~~(d)~~ **(h)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Comment 2: Fermentation Scrubber

The vapors from the fermentation process would be routed to a scrubber to recover residual ethanol. The carbon dioxide and other gases are vented to atmosphere. VOC BACT for this scrubber was determined to be an overall control efficiency of at least 98%. Permit, Sec. D.1.5(a)(3), p. 29.

A scrubber normally directs the collected ethanol and water from the scrubber back into the process and thus is considered part of the process, not a separate control device. Additional control, beyond the basic scrubber, is generally required. This is typically a more efficient scrubber, an additional scrubber, a carbon dioxide collection process, or venting the scrubbed gases to a thermal oxidizer. VOC BACT is an overall control efficiency of 98% or a VOC outlet concentration not to exceed 20 ppm. Permit, Sec. D.1.5(a)(3). The Permit does not require BACT for the fermentation process for two reasons.

First, higher scrubber control efficiencies have been required in other permits and achieved in practice. These include permits issued to CalGren Renewable Fuels, CA (routes the CO_2 scrubber gases to the thermal oxidizer, scrubber achieves 99% VOC control and RTO 98.5% for combined VOC control of 99.99%) and United Wisconsin Grain Producers (98.7% VOC control). Stack tests summarized by IDEM in VOC BACT analysis for Andersons indicates that higher scrubber control efficiencies are routinely achieved. See results for Al-Corn, MN (99.2%), Central MN Ethanol (99.0%), CMEC, MN (98.98%), Gopher State, MN (99.5%), and New Energy Corp., IN (99.5%). TSD, Attach. B, pp. 3-4.

IDEM did not explain why these higher control efficiencies do not establish BACT for Andersons. BACT is an emission limit based on the maximum degree of reduction that is achievable. 326 IAC 2-2-1((h). These stack tests indicate that a higher VOC control efficiency than 98% is achievable and thus should be required here as BACT for VOCs.

Second, the permit requires an overall VOC control efficiency of at least 98% or a VOC outlet concentration not to exceed 20 ppmv. Permit, Sec. D.1.5(a)(3). The TSD does not explain how the 20 ppmv value was determined. It is unclear from the materials available for review whether the 20 ppmv concentration corresponds to at least 98% VOC control or something less. If the latter, the phase "or the VOC outlet concentration shall not exceed 20 ppmv" should be removed from the Permit as it would not represent the maximum degree of reduction that is achievable. The response to comments should explain how this concentration was determined and justify why it satisfies BACT. See e.g. Alaska Department of Environmental Conservation v. U.S. EPA, 124 S.Ct., 983, 1003 (2004)(BACT must be based on reasoned analysis).

Response 2: The Andersons Clymers fermentation process does not vent the scrubbed gases to a thermal oxidizer.

The BACT (326 IAC 8-1-6) requirement for fermentation specifies that the source will control VOCs through the use of a scrubber which must operate at a control efficiency of no less than ninety-eight percent (98%). This level of control efficiency is consistent with BACT determinations made in Indiana and in other States. IDEM has not identified any BACT requirements that are more stringent than 98% for ethanol production facilities. IDEM has confirmed that there are at least three facilities in California that have a higher control efficiency requirement than 98% (synthetic minor limits), however based on discussions between IDEM and the San Joaquin Valley Unified Air Pollution Control District it has been confirmed that these facilities have not demonstrated compliance with these limits through stack testing. IDEM is aware that other sources have achieved control efficiencies during testing that exceed 98%. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that 99% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

No changes have been made to the permit as a result of this comment.

The requirement to achieve an overall control efficiency of no less than 98% or a VOC outlet concentration not to exceed 20 ppmv is consistent with BACT determinations made in Indiana and in other States. In addition, the establishment of a VOC concentration limitation as an alternative to a control efficiency requirement is consistent with the compliance requirements established by the US EPA as part of its national ethanol settlements and as part of recently promulgated NESHAPs. The concentration requirement was established because at extremely low VOC concentrations, a control

efficiency of 98% may not be achievable in practice. BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that 98% is achievable, IDEM and the US EPA have used discretion in allowing sources to meet the control efficiency requirement during periods of moderate to high VOC concentrations, but not during periods of extremely low VOC concentrations.

No changes have been made to the permit as a result of this comment.

Comment 3: Thermal Oxidizer

The VOC emissions from the distillation and evaporation process and from the dried distillers grain and solubles ("DDGS") drying process will be controlled by two recuperative thermal oxidizers ("RTOs"), designated C-10 and C-11. Permit, Sections A.3(11) and (12) and D.1.5(d), p. 30. VOC BACT for these processes is an overall control efficiency of at least 98% or a VOC outlet concentration not to exceed 10 ppmv. Permit, Sections D.1.5(b)(3) and D.1.5(d)(3). This is not BACT for two reasons.

First, higher VOC control efficiencies have been permitted and achieved at other similar facilities. Barr-Rosin, a major dryer vendor, guaranteed the emissions for the Penn Marr Ethanol Project at 98.5% VOC control. The permit issued to Ethanol 2000, MN requires 99.4% VOC control. The permit issued to CalGren in California requires 99.5% VOC control.

Stack tests summarized by IDEM indicate that higher control efficiencies are routinely achieved for these processes. The Andersons TSD identifies two facilities that achieved higher VOC control efficiencies for distillation and evaporation processes using scrubbers: Al-Corn, MN (99.2%) and Central MN Ethanol (99.0%). TSD, App. B, p. 8. The Andersons TSD also identified three facilities that achieved higher VOC control efficiencies for the DDGS dryers using RTO: Michigan Ethanol (99.6%), New Energy Corp (98.8%, 99.2%) and Agri-Energy, MN (99.59%). TSD, App. B, pp. 11-12.

IDEM did not explain why these higher control efficiencies do not establish BACT for Andersons. BACT is an emission limit based on the maximum degree of reduction that is achievable. 326 IAC 2-2-1((h). These stack tests indicate that a higher VOC control efficiency than 98% is achievable and thus should be required here as BACT for VOCs.

Second, the permit requires an overall VOC control efficiency of at least 98% or a VOC outlet concentration not to exceed 10 ppmv. Permit, Sec. D.1.5(a)(3). The TSD does not explain how the 10 ppmv value was determined. It is unclear from the materials available for review whether the 10 ppmv concentration corresponds to at least 98% VOC control or something less. If the latter, the phase "or the VOC outlet concentration shall not exceed 10 ppmv" should be removed from the Permit as it would not represent the maximum degree of reduction that is achievable. The response to comments should explain how this concentration was determined and justify why it satisfies BACT. See e.g. Alaska Department of Environmental Conservation v. U.S. EPA, 124 S.Ct., 983, 1003

(2004)(BACT must be based on reasoned analysis).

Response 3: The BACT (326 IAC 8-1-6) requirement for distillation and evaporation, and for the dried distillers grain and sollubles (DDGS) drying process, specifies that the source will control VOCs through the use of a thermal oxidizer which must operate at a control efficiency of no less than ninety-eight percent (98%). This level of control efficiency is consistent with BACT determinations made in Indiana and in other States. IDEM has not identified any BACT requirements that are more stringent than 98% for ethanol production facilities. IDEM has confirmed that there are at least three facilities in California that have a higher control efficiency requirement than 98% (synthetic minor limits), however based on discussions between IDEM and the San Joaquin Valley Unified Air Pollution Control District it has been confirmed that these facilities have not demonstrated compliance with these limits through stack testing. IDEM is aware that sources have achieved control efficiencies during testing that exceed 98%. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that 99% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

The requirement to achieve an overall control efficiency of no less than 98% or a VOC outlet concentration not to exceed 10 ppmv is consistent with BACT determinations made in Indiana and in other States. In addition, the establishment of a VOC concentration limitation as an alternative to a control efficiency requirement is consistent with the compliance requirements established by the US EPA as part of its national ethanol settlements and as part of recently promulgated NESHAPs. The concentration requirement was established because at extremely low VOC concentrations, a control efficiency of 98% may not be achievable in practice. BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that 98% is achievable, IDEM and the US EPA have used discretion in allowing sources to meet the control efficiency requirement during periods of moderate to high VOC concentrations, but not during periods of extremely low VOC concentrations.

No changes were made to the permit as a result of this comment.

Comment 4: Liquid Storage Tanks

The facility includes five large tanks that store 200-proof ethanol, denatured ethanol, and gasoline. These tanks together would emit 1.42 ton/yr of VOCs. Permit, Sec. A.3(a)(16)-(20), p. 8. These emissions should be collected in a vapor recovery system and routed to the flare or thermal oxidizer for destruction to comply with BACT.

Response 4: The Andersons Clymers is not subject to PSD BACT where insignificant sources of emissions are required to be controlled by control equipment or control techniques. The Andersons Clymers is only subject to 326 IAC 8-1-6, BACT. The storage tanks are not subject to 326 IAC 8-1-6 because they don't have potential VOC emissions of 25 tons per year or greater. However, these tanks are equipped with internal floating roofs to control their VOC emissions to comply with the NSPS, Subpart Kb.

No changes were made to the permit as a result of this comment.

Comment 5: Particulate Matter Emissions Exceed the Major Source Threshold

A new source, such as this one, is required to have a Part 70 operating permit unless it meets certain conditions, set out in 326 IAC 2-7-2(b). Sources that are not major are exempt. A "major source" means any stationary source that emits or has the potential to emit, in the aggregate 10 tons per year ("ton/yr") or more of any hazardous air pollutant ("HAP") which has been listed in Section 112(b) of the CAA; 25 ton/yr or more of any combination of such hazardous air pollutants; or 100 ton/yr or more of any regulated air pollutant. 326 IAC 2-7-1(21). A source such as an ethanol plant must obtain a PSD permit if its emissions exceed the PSD major source threshold set out at 326 IAC 2-2-1(w).

Particulate matter ("PM") and particulate matter with an aerodynamic diameter less than 10 microns ("PM10") are regulated pollutants. As we demonstrate below, the emissions of PM and PM10 exceed 100 tons/yr, classifying Andersons as a major source. Further, the emissions of PM, PM10, SO2, VOCs and NOx reported in the TSD, page 6, exceed the PSD significance thresholds. Thus, IDEM should deny this Permit and require that the applicant apply for a Part 70 operating permit. The new application should include a BACT analysis for PM, PM10, SO2, VOCs, and NOx for all sources. In addition, the new application should include an air quality impact analysis that evaluates the impact of the project on ambient air quality standards, PSD increments, visibility, soils and vegetation and other PSD requirements.

Fugitive PM10 Emission From Paved Roads

The TSD indicates that the project would emit 98.69 ton/yr of PM, just shy of the 100 ton/yr major source threshold. TSD, p. 6. The TSD estimated that 19.1 ton/yr of PM would be emitted from truck travel over paved roads within the facility. TSD, p. 6 and App. A, p. 7. These emissions were calculated using an equation from AP-42 (AP-42 Sec. 13.2.1), based on a silt content of 0.6 g/m^2. TSD, App. A., p. 8.

Dust emissions from paved roads vary with the amount of silt on road surface, referred to as "silt loading." The TSD used a background silt loading value for typical urban roadways taken from AP-42 Table 13.2.1-3. However, the paved roads of interest here are within the boundary of an existing industrial site and thus are industrial roadways. Silt loading values of industrial roads are much higher, vary greatly, and were reported elsewhere in the same chapter of AP-42.

AP-42 specifically states that the use of a tabulated default value for silt loading results in only an order-of-magnitude estimate of the emission factor for fugitive dust from truck

traffic on paved roads, and, therefore, recommends the collection and use of site-specific silt loading data. In the event that a site-specific value is not available (as here), AP-42 recommends the selection of an appropriate mean value from a table listing silt loadings that were experimentally determined for a variety of industrial roads but cautions that the quality rating of the equation decreases by 2 levels. The industrial roadway table provides a range of mean silt loading values from 7.4 to 292 g/m^2. AP-42 Sec. 13.2.1-4, Table 13.2.1-4

The Permit used a silt loading of 0.6 g/m^2, thereby considerably underestimating PM10 emissions from paved roads within the facility. If the **lower** end of the AP-42 industrial roadway range is used in IDEM's Excel spreadsheet, the PM emissions from paved roads increases from 19.1 ton/yr to 98.1 ton/yr. If these revised totals are added to the emissions from other sources at the facility (TSD, p. 6), the potential to emit of PM increases from 98.69 ton/yr to 177.69 ton/yr. This latter figure exceeds the major source threshold of 100 ton/yr, requiring Part 70 and PSD permits. The PM emissions from paved roads would have to be reduced by over 99.9% to reduce the facility wide potential to emit to below 100 ton/yr. It is not feasible to reduce fugitive paved road PM emissions by over 99.9% using all feasible control options, e.g., watering, wheel washing, 2 feet of freeboard, covering truck beds, enforced speed limits. Thus, this facility is a major source for PM.

If the upper end of the industrial road range of 292 g/m^2 is used, which is appropriate for a potential to emit calculation, the PM emissions increase to 1,069.2 ton/yr and PM10 emissions increase to 208.6 ton/yr. These increases in both PM and PM10 emissions are sufficient by themselves to cause facility-wide PM and PM10 emissions to exceed 100 ton/yr. Thus, a FESOP is inappropriate. IDEM should deny this permit and require the applicant to apply for Part 70 and PSD permits.

Response 5: The IDEM has evaluated the emission calculations included in the application and investigated the claims made by the commenter with regard to the paved road calculations included in the permit. Based on IDEM's evaluation, the 0.6 grams per square meter value is consistent with the ranges prescribed in AP-42 for paved roads at this type of industrial facility.

Comment 6: <u>Condensable Particulate Matter</u>

Particulate matter consists of two parts, filterable and condensable. The TSD correctly reports emissions for total PM10, but inexplicably calculates only filterable PM emissions. See, for example, TSD, App. A., pp. 3, 4. The condensable fraction of PM emissions should be included in the potential to emit of PM from combustion sources.

Response 6: IDEM has evaluated the emission calculations for PM and PM10 and agrees that corrections need to be made on Pages 3 and 4 TSD App A. Corrections are as follows:

Page 3

Heat Input Capacity	Potential Throughput					
MMBtu/hr	MMCF/yr					
16.5	144.5					
Grain Dryer						
	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	~~1.9~~ **7.6**	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	~~0.14~~ **0.55**	0.55	0.04	7.23	0.40	6.07

~~*PM emission factor is filterable PM only.~~ **PM/**PM10 emission factor is filterable and

condensable ~~PM10~~ combined.

Page 4

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	
16.5	42.9	Natural Gas Usage Limit

Grain Dryer						
	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	~~1.9~~ **7.6**	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	~~0.04~~ **0.16**	0.16	0.01	2.15	0.12	1.80

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

Comment 7: <u>The Permit Does Not Limit the Potential to Emit</u>
The proposed Permit is a FESOP. To qualify as a FESOP, the Permit must limit emissions below major source thresholds. The Permit states that it limits the source's potential to emit to less than major source levels, including less than 100 ton/yr for PM10, NOx, CO, SO_2, and VOCs; less than 10 tons per year for any individual HAP; and less than 25 ton/yr for any combination of HAPs. However, our review of the Permit indicates that it falls far short of this goal for the reasons set out below.

<u>Facility</u>

The facility is a collection of 75 separate emission units that exhaust through 10 separate emission points. Permit, pp. 6-8. The sum of the emissions of each regulated pollutant from all of these sources must be less than the major source thresholds for each pollutant. As discussed below, the Permit does not contain practically enforceable emission restrictions, production and operating conditions, monitoring, and recordkeeping to assure that emissions remain below these thresholds.

The Permit claims that emissions are below major source thresholds if certain emission limits are met. Permit, Sections D.1.4(a) (PM); D.1.4(b) (PM10); D.1.4(c) (NOx); D.1.4(d) (VOC and HAPs); D.1.4(e) (CO); and D.1.4(f) (SO2). However, the claims in the Permit sections are incorrect and legally baseless. The emission limits in the cited sections exclude many sources of emissions of each regulated pollutant.

The TSD estimated the potential to emit of most pollutants from most emission points and summed them. TSD, p. 6 and App. A. However, the Permit does not contain restrictions that limit emissions to those that were assumed in the TSD nor does it require that the emissions from each emission point be summed and compared to the major source thresholds. Thus, the Permit does not assure that the potential to emit will continuously remain below the major source thresholds as promised in Section D.1.4. The Permit should be revised to restrict emissions of each regulated pollutant from each emission unit, to require that emissions from each source be regularly measured, and to require

that the measurements of emissions from each emission point be summed and compared to major source thresholds.

Response 7: The combined potential to emit for each criteria pollutant from the proposed ethanol plant and the existing grain elevator has been individually limited through the combination of throughput limits, fuel usage limits, limits on the hours of operation, and the use of various control equipment operated at parameters established during stack tests. Compliance with these limits and monitoring of the control operating parameters will keep the emissions to less than 100 tons per year for each criteria pollutant, single HAP to less than 10 tons per year and combined HAPs to less than 25 tons per year. However, IDEM has determined that Condition D.2.3 should be revised to reflect separate PM and PM10 limits for grain receiving, which is controlled by Baghouse #1 and separate PM and PM10 limits for internal grain handling, controlled by Baghouse #2 as follows:

D.2.3 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(a) The PM emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Grain Elevator - **Receiving**	Baghouse #1	~~1.8~~ **0.013**
Grain Drying	Screen Enclosure	~~0.95~~ **0.24**
Grain Internal Handling	Baghouse #2	**0.043**

Compliance with these PM limits in combination with the PM emission limits in Condition D.1.4, limits the PM emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable.

(b) The PM10 emissions from the following emission units shall be limited as follows:

Emission Unit/Facility	Control	PM10 Emission Limit (lbs/hr)
Grain Elevator - **Receiving**	Baghouse #1	~~1.8~~ **0.013**
Grain Drying	Screen Enclosure	~~0.95~~ **0.24**
Grain Internal Handling	Baghouse #2	**0.043**

Compliance with these PM10 limits in combination with the PM10 emission limits in Condition D.1.4, limits the PM10 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

Page 13 of 14, now 13 of 15 has been revised to include the detailed HAPs emissions.

The Summary of Emissions on Page 1 of 14 TSD App A, now Page 1 of 15 TSD APP A has been revised because it counted the PM emissions from the grain drying process twice. The grain elevator PM emissions as written in the proposed permit Summary of Emissions, included the grain drying process emissions, although there is a separate column for the grain drying process emissions.

Page 2 of 14 TSD App A, now 2 of 15 has also been revised to consider the worst case emissions from the grain shipping by removing the control credit for using enclosures. The changes are as follows:

GRAIN ELEVATOR

SHIPPING								
	TRUCK	100,000	BUSHELS	(assume beans at 60 lb/bushel)				
		6000000	POUNDS					
		3000	TONS					
		3000	TONS x	0.029	# PM10/TON		0.086 # PM/TON	
		0.04	TONS PM10/YR (UNCONTROLLED)					
		0.13	TONS/PM/YR (UNCONTROLLED)					
		~~87.00~~	~~POUNDS PM10 x 0.011 CONTROL FACTOR~~					
		~~0.96~~	~~POUNDS PM10~~					
		~~0.00~~	~~TONS PM/PM10/YR (CONTROLED)~~					
	RAIL	900,000	BUSHELS	(assume beans at 60 lb/bushel)				
		54000000	POUNDS					
		27000	TONS					
		27000	TONS x	0.0022	# PM10/TON		0.027 # PM/TON	
		0.03	TONS PM10/YR (UNCONTROLLED)					
		0.36	TONS PM/YR (UNCONTROLLED)					
		~~59.40~~	~~POUNDS PM10 x 0.011 CONTROL FACTOR~~					
		~~0.65~~	~~POUNDS PM10~~					
		~~0.00~~	~~TONS PM10~~					

GRAIN TERMINAL				ETHANOL PLANT														
U N C O N T R O L L E D E M I S S I O N S (TONS/YR)																		
Pollutant	Grain Elevator	Grain Drying	Grain Dryer Combustion	Hammer-mill	Grain Handling fr. Existing Elevator	DDGS Cooling Drum	DDGS Storage/ Loadout	Cooling Tower	Paved Roads (Fug.)	Valves Flanges (Fug.)	Fermentation	Loading Rack	Methanator Flare	RTOs Combu s-tion	Distillation/Evaporation DDGS Drying, and Combustion	Emergency Pump	Storage Tanks	**Process Tanks (insig.)**	TOTAL PTE
PM	58.73	16.02	~~0.14~~ **0.55**	96.17	~~54.25~~ **34.47**	3.21	15.35	16.44	19.1		14		0.0008	356.9	RTO, Distillation/Evap., and dryer	2.89			~~653.20~~ **633.83**
PM10	25.09	4	0.55	48.09	~~54.25~~ **19.21**	3.21	5.17	16.44	3.73		31		0.0033	356.9	RTO, Distillation/Evap., and dryer	2.89			551.32
VOC			0.4			13.2				56.27	1650	67.6	0.0824	1784.8	RTO, Distillation/Evap., and dryer	3.3	2.5	**0.649**	3578.80
NOx			7.23									**1.91**	0.154	54.5	40.2	40.73			144.72
SO2			0.04										0.0003	1.11	80.3	2.69			84.14
CO			6.07									**10.37**	0.63	94.57	RTO, Distillation/Evap., and dryer	8.78			120.42
Single HAP								0.54		8.7	229.6				**99.93**				~~238.84~~ **338.77**
Combined HAPs								1.02		9.87	301				**186.66**				~~311.89~~ **497.92**

C O N T R O L L E D E M I S S I O N S (TONS/YR)																		
Pollutant	Grain Elevator	Grain Drying	Grain Dryer Combustion	Hammer-mill	Grain Handling fr. Existing Elevator	DDGS Cooling Drum	DDGS Storage/ Loadout	Cooling Tower	Paved Roads (Fug.)	Valves Flanges (Fug.)	Fermentation	Loading Rack	Methanator Flare	RTOs Combu s-tion	Distillation/Evaporation DDGS Drying, and Combustion	Emergency Pump	Storage Tanks	**Process Tanks** (insig.)	TOTAL PTE
PM	~~1.84~~ **1.27**	1.06	~~0.04~~ **0.16**	14.52	~~7.41~~ **3.45**	3.21	4.3	16.44	19.1		0.27		0.0008	30.33	RTO, Distillation/Evap., and dryer	0.17			~~98.69~~ **94.28**
PM10	~~0.37~~ **0.44**	1.06	0.16	7.26	~~7.41~~ **1.92**	3.21	1.45	16.44	3.73		0.61		0.0033	30.33	RTO, Distillation/Evap., and dryer	0.17			~~72.20~~ **66.78**
VOC			0.12			13.2				9.74	33	**2.28** ~~1.6~~	0.0824	35.7	RTO, Distillation/Evap., and dryer	0.19	2.5	**0.649**	~~96.13~~ **96.78**
NOx			2.15									**0.35**	0.154	54.5	40.2	2.23			~~99.23~~ **99.58**
SO2			0.01										0.0003	1.11	80.3	0.15			81.57
CO			1.8									**1.89**	0.63	94.57	RTO, Distillation/Evap., and dryer	0.5			~~97.5~~ **99.39**
Single HAP								0.54		1.5	4.59				**2.0**				~~6.63~~ **863**
Combined HAPs								1.02		1.69	6				**3.74**				~~8.71~~ **12.45**

EMISSIONS FROM DISTILLATION/EVAPORATION DDGS DRYERS & 2 RTOS (180 mmBtu/hr & 244 MMBtu/hr)						
RTOs	244	MMBtu/hr				
Maximum Capacity, tons/yr =		356,880	DDGS Dried			
	Uncontrolled			Controlled		
	PM/PM10	CO	VOC	PM/PM10	CO	VOC
Emission Factor in lb/ton	2.00E+00	5.3E-01	1.0E+01	0.17	0.53	0.2
Potential Emission in tons/yr	356.88	94.57	1784.40	30.33	94.57	35.69
	SO2	SO2 (combustion)	Total SO2 Emissions	NOx		
Emission Factor	0.45 lb/ton	0.6lb/MMCF		51 lbs/MMCF		
Emissions from combustion and DDGS drying process with the use of Sulfuric Acid to control PH in the process	80.30	1.11	81.41	54.50		

DDGS DRYING							
UNCONTROLLED					**CONTROLLED**		
Acetaldehyde 0.56 lb/ton	**Formaldehyde 0.31 lb/ton**	**Acrolein 0.066 lb/ton**	**Methanol 0.11 lb/ton**	**Acetaldehyde 0.56 lb/ton**	**Formaldehyde 0.31 lb/ton**	**Acrolein 0.066 lb/ton**	**Methanol 0.11 lb/ton**
99.93	**55.32**	**11.78**	**19.63**	**2.00**	**1.11**	**0.24**	**0.39**

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(i) Pursuant to 326 IAC 2-8-4 (FESOP), and to render the requirements of 326 IAC 2-4.1-(New Source Toxics Control) not applicable, the HAP emissions from the following emission units shall be limited as follows:

(1) DDGS drying controlled by the RTOs (C-10 and C-11) shall not exceed 0.46 pounds Acetaldehyde per hour.

(2) Fermentation process controlled by the scrubber (S-40) shall not exceed 1.05 pounds Acetaldehyde per hour.

Compliance with these limits in combination with the single HAP and total HAPs emissions from other units, limits the single HAP emissions and total HAPs emissions from the entire source to less than ten (10) tons per year and twenty five (25) tons per year, respectively. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) are not applicable.

Comment 8: Section C.2(b) renders the attempt to limit the potential to emit to below the major source threshold not practically enforceable as the permittee is permitted to add additional emission units but there is no method to test, monitor and report whether emissions from these additional units actually increases the potential to emit or actual emissions to above

any of the major source threshold.

Similarly the note in the Box under Section D.1 which states "the information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions" renders the attempt to limit the potential to emit to below the major source threshold not practically enforceable. The permittee is permitted to add additional emission units or larger versions of the explicitly permitted emission units but there is no method to test, monitor and report whether emissions from these additional units actually increases the potential to emit or actual emissions to above any of the major source threshold.

Response 8: IDEM agrees that The Andersons Clymers could add insignificant activities that could potentially result in an exceedance of the source's emission cap, and thus could trigger 326 IAC 2-2 and 326 IAC 2-7, since the source's limited emissions are so close to the major threshold. Therefore, Condition C.2 was revised as follows:

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

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

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, including 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 make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)

(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) 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 apply for a Significant Permit Revision, pursuant to 326 IAC 2-8-11.1(g)(2) when** ~~be allowed to add~~**ing** insignificant activities not already listed in this permit~~, provided the source's potential to emit does not exceed the above specified limits.~~ **in order to adjust the emissions cap limitations.**

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

The maximum capacities listed in the emission unit descriptions in SECTION Ds process description boxes are used by IDEM, OAQ in order to completely describe the units and to assess the source's potential to emit. The process specific emissions limitations identified in Section D of the permit are often determined from this information. Physical changes or changes in the method of operation that changed the capacity may also increase the emission unit's potential to emit. Documenting the capacity will assist both the permittee and the IDEM in evaluating whether such a change requires a source modification permit or other approval. If these capacities are not accurate, the source is required to notify IDEM, OAQ since this may change the applicability of the air permitting rules, and may result in permit modification.

Comment 9: Emission Points

The U.S. EPA has explained that to appropriately limit potential to emit, permits "must contain a production or operational limitation in addition to the emission limitation in cases where the emission limitation does not reflect the maximum emissions of the source operating at full design capacity without pollution control equipment. The Permit does not comport with this guidance.

The TSD indicates that uncontrolled potential emissions would exceed major source thresholds without federally enforceable limits to restrict emissions. TSD, p. 5. Further, the controlled emissions, summarized in a table on page 6 of the TSD, shows that emissions of regulated pollutants are close to major source thresholds, e.g., NOx emissions total to 99.23 ton/yr, just 0.77 ton/yr shy of the 100 ton/yr threshold. Omitted sources (such as NOx from the loading rack flare and an emergency diesel generator which must be operated on a regular basis for testing and maintenance, would increase NOx emissions to 100 ton/yr). Thus, the Permit should at least include enforceable conditions to restrict emissions for each pollutant and source to those evaluated in the TSD. These conditions should include both emission limits and operational or production limits. However, in many cases, the Permit does not include either, or includes only an emission limit. If it is not possible to add sufficient conditions to have practically enforceable emission limits for all emission sources that total less than the major source threshold, as is currently the case, that major source permits, rather than a FESOP, must be issued.

Response 9: More requirements have been added in Condition D.1.4, which include all changes made to this condition as a result of Berger and Berger's Comments 1, 9, 10, 12, and 15. The revisions are as follows:

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(a) The PM emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Hammermill, ~~and~~ Scalping, **and Grain Handling to Ethanol Day Bin** ~~operation~~	Baghouse S-30	~~3.3~~ **4.1**
~~Cooling Drum and~~ DDGS Storage/Loadout	Baghouse S-90	~~1.71~~ **0.98**
Cooling Drum	**Baghouse S-70**	**0.73**
DDGS Dryer	RTOs C-10&C-11	6.9

Compliance with these PM limits in combination with the PM emission limits in Condition D.2.3, limits the PM emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable.

(b) The PM10 emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM10 Emission Limit (lbs/hr)
Hammermill operation **and Grain Handling to Ethanol Day Bin**	Baghouse S-30	~~1.66~~ **2.09**

~~Cooling Drum and~~ DDGS Storage/Loadout	Baghouse S-90	~~1.06~~ **0.33**
Cooling Drum	**Baghouse S-70**	**0.73**
DDGS Dryer	RTOs C-10&C-11	6.9

Compliance with these PM10 limits in combination with the PM10 emission limits in Condition D.2.3, limits the PM10 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(c) The PM/PM10 emissions from the cooling tower shall not exceed 3.75 pounds per hour, and 16.44 tons per year. Compliance with this limit shall render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

~~(c)~~ **(d)** The NOx emissions from the following emission units shall be limited as follows:

(1) The NOx emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas, and the total natural gas fuel usage shall be limited to 2,137.4 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

(2) The NOx emissions from the four DDGS Dryers shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas, and the total natural gas fuel usage shall be limited to 1,550.5 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

When using biogas as fuel for the DDGS Dyers every 1.17 cubic feet is equivalent to 1 cubic foot of natural gas.

(3) The RTOs (C-10 & C-11) shall only combust natural gas as fuel, and the DDGS dryers shall only combust natural gas and biogas as fuel.

(4) The NOx emissions from the RTOs (C-10 & C-11) shall be limited to 12.44 pounds per hour.

Compliance with these limits in combination with the NOx emission limits in Condition D.3.1, limits the NOx emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

~~(d)~~ **(e)** The VOC emissions from the following emission units shall be limited as follows:

(1) The VOC emissions from the DDGS Cooling Drum shall be limited to 3 pounds per hour.

(2) The VOC emissions from the fermentation scrubber shall be limited to 7.5 pounds per hour.

(3) The VOC emissions from the **loading racks shall be limited as follows:**

(i) Combined VOC emissions from the truck loading rack and the railcar loading rack shall not exceed 2.03 lbs/hr.

(ii) The truck loading rack and the railcar loading rack shall be limited to a combined throughput of 110,000,000 gallons of ethanol per twelve

consecutive month period with compliance determined at the end of each month.

(iii) The truck loading rack and the railcar loading rack shall be limited to 1690 operating hours per twelve consecutive month period with compliance determined at the end of each month.

(iv) The railcar loading rack and the truck loading rack shall utilize only a submerged fill loading system.

~~flare for both truck and rail shall not exceed 2.03 lbs/hr. The loading rack shall also be limited to 1600 operating hours per twelve consecutive month period at be limited to a the maximum loading rates of 600 gpm for trucks and 1200 gpm for railcars.~~

(4) The VOC emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11), which control emissions from distillation, evaporation, yeast tanks, and the DDGS Dryers shall not exceed 8.15 pound per hour.

Compliance with these limits shall limit the VOC emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable. Compliance with these VOC limits shall also limit the HAPs emissions from the entire source to less than 10 tons per year for single HAP and less than 25 tons per year for combined HAPs, which renders the requirements of 326 IAC 2-7, Part 70 not applicable.

~~(e)~~ **(f)** The combined CO emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) and the four DDGS Dryers shall not exceed 21.6 pounds per hour. Compliance with this limit in combination with the CO emission limit in Condition D.2.3 shall limit the CO emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

~~(f)~~ **(g)** The SO_2 emissions from the four DDGS dryers shall not exceed 0.45 pound per ton of DDGS dried, and the throughput shall be limited to a total of 356,880 tons of DDGS dried per twelve consecutive month period with compliance determined at the end of each month. Compliance with this limit shall limit the SO_2 emissions from the entire source to less than 100 tons per year, which renders renders the requirements of 326 IAC 2-2, PSD and 326 IAC 2-7, Part 70 not applicable.

(h) The following conditions shall apply to the biomethanator and the enclosed flare

(1) The operation of the biomethanator flare shall be limited to 500 operating hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The biomethanator flare and the enclosed flare shall be designed as smokeless flares.

(3) Both flares shall have a soot concentration value of 0 mg per liter.

Compliance with this condition shall renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(i) Pursuant to 326 IAC 2-8-4 (FESOP), and to render the requirements of 326 IAC 2-4.1

(New Source Toxics Control) not applicable, the HAP emissions from the following emission units shall be limited as follows:

(1) DDGS drying controlled by the RTOs (C-10 and C-11) shall not exceed 0.46 pounds Acetaldehyde per hour.

(2) Fermentation process controlled by the scrubber (S-40) shall not exceed 1.05 pounds Acetaldehyde per hour.

Compliance with these limits in combination with the single HAP and total HAPs emission limits for other units, limits the single HAP emissions and total HAPs emissions from the entire source to less than ten (10) tons per year and twenty five (25) tons per year, respectively. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) are not applicable.

Comment 10: Fired Sources

The facility includes a number of sources that burn fuel, including four DDGS dryers, two RTOs, one emergency pump, and a grain dryer. Permit, pp. 6-8. The emissions from these sources depend on the type and characteristics of the fuel.

The TSD potential to emit calculations, for example, assume that natural gas would be fired in the dryers and RTOs. However, the Permit does not restrict the type or amount of fuel that would be fired in these combustion sources. Propane is commonly used as a backup fuel. If propane were fired in the grain dryer, the increase in NOx emissions from this dryer would be sufficient to cause the potential to emit of NOx to exceed 100 ton/yr. This increase likely would not be detected because emissions from the grain dryer are not monitored and the Permit does not restrict the type of fuel that can be burned or require that it be recorded and reported.

The Permit as drafted contains no conditions to limit the type or amount of fuel that would be fired in any of these sources. Thus, the Permit fails to restrict emissions of CO, NOx, PM10, and SO_2 from these fired sources to assure that these emissions plus those from all other sources continuously remain below major source thresholds.

Response 10: The following conditions were revised to address the possibility of using propane as a backup fuel for all natural gas-fired emission units, although the source has indicated that it will use only natural gas for fuel.

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

~~(c)~~ **(d)** The NOx emissions from the following emission units shall be limited as follows:

(1) The NOx emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas, and the total natural gas fuel usage shall be limited to 2,137.4 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

(2) The NOx emissions from the four DDGS Dryers shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas, and the total natural gas fuel usage shall be limited to 1,550.5 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

When using biogas as fuel for the DDGS Dyers every 1.17 cubic feet is equivalent to 1 cubic foot of natural gas.

(3) The RTOs (C-10 & C-11) shall only combust natural gas as fuel, and the DDGS dryers shall only combust natural gas and biogas as fuel.

(4) The NOx emissions from the RTOs (C-10 & C-11) shall be limited to 12.44 pounds per hour.

Compliance with these limits in combination with the NOx emission limits in Condition D.3.1, limits the NOx emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

D.2.3 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

~~(c)~~ **(d)** The NOx emissions from the 16.5 million British thermal units per hour (MMBtu/hr) grain dryer shall not exceed 100 pounds per million cubic feet (lb/MMCF) and the CO emissions shall not exceed 84 pounds per million cubic feet (lb/MMCF) when using natural gas. Natural gas fuel usage shall be limited to 42,900,000 cubic feet per twelve consecutive month period with compliance determined at the end of each month.

The 16.5 million British thermal units per hour (MMBtu/hr) grain dryer shall only combust natural gas as fuel.

Compliance with these limits in combination with the limit in Condition D.1.4, limits the NOx and CO emissions from the entire source to less than 100 tons per year for each pollutant, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

Comment 11: Methanator Flare

The facility will use a digester to treat process water. The digester generates gases that include hydrocarbons, primarily methane, and hydrogen sulfide. These gases will be burned in the thermal oxidizer during normal operations. When the thermal oxidizer is down, these gases will be burned in the methanator flare.

The Permit does not contain any enforceable conditions that require that the facility operate in this manner. The digester gases, for example, could be routed to the methanator flare during normal operation. The Permit does not contain any restrictions on the potential to emit of any regulated pollutant from the methanator flare nor does it set a BACT limit for VOC emissions from the methanator flare. Thus, the methanator flare is a potentially unlimited source of emissions.

Ethanol Loading Rack

The facility will use a flare to combust vapors from loading ethanol into tanker trucks and railcars. Combustion of ethanol vapors in the flare will generate VOC, NOx, CO, and PM10 emissions. TSD, p. 6. The Permit restricts VOC emissions (to an excessively high value, see Comment I.A) and ethanol loadout operating hours, but does not limit PM10, NOx or CO.

The pollutants PM10, NOx, and CO are combustion byproducts. The magnitude of these emissions depends upon the design of the flare. The emission calculations assumed the use of smokeless flare with negligible PM/PM10 emissions and low NOx and CO emissions. The same VOC destruction efficiency could be achieved using a different type of flare, but with higher PM/PM10, NOx, and CO emissions. Thus, the Permit should be revised to restrict the emissions of PM10, NOx, and CO to the levels assumed in the TSD and to require the use of smokeless flare.

We further note that the Permit does not restrict loadout to 110 million gallons per year, the amount assumed in the emission calculations. Instead, it limits loadout to 600 gpm (57.6 million gallons) for trucks and 1200 gpm for railcars (115.2 million gallons per year). Permit, Sec. D.1.4(d), p. 28. Loading VOC emissions would exceed those assumed in the potential to emit calculations (TSD, App. A, p. 10) if only railcars were loaded. Thus, the Permit does not restrict the potential to emit from this source to the values assumed in the calculations in the TSD, page 6.

Response 11: IDEM agrees that an additional condition should be added in the permit to address the biomethanator flare and the loading racks enclosed flare. The following condition was added to Condition D.1.4 as follows:

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(h) The following conditions shall apply to the biomethanator and the enclosed flare:

(1) The operation of the biomethanator flare shall be limited to 500 operating hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The biomethanator flare and the enclosed flare shall be designed as smokeless flares.

(3) Both flares shall have a soot concentration value of 0 mg per liter.

Compliance with this condition shall render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

Please see Response 1 of this addendum for the loading racks limits.

Comment 12:. Grain Receiving And Loadout Fugitive PM10 Emissions

The facility would generate 9.25 ton/yr of PM and 7.74 ton/yr of PM10 from grain receiving and loadout operations (grain elevator, grain handling/transferring from the existing elevator to the ethanol plant). The Permit does not restrict the potential to emit fugitive PM and PM10 emissions from these sources and does not require any testing, recordkeeping, or reporting to assure that these assumed emission rates (and very high control efficiencies) are achieved.

The fugitive emissions from grain receiving and loadout operations were estimated from emission factors expressed in pounds of PM10 per ton of material loaded and a capture efficiency of 98.9%. TSD, App. A, p. 2. The Permit should be revised to require the following to confirm the TSD's calculations:

- restrict the potential to emit PM and PM10 from these sources by including both emission limits and production limits. It also should require monitoring and reporting to assure these restrictions are complied with.
- require daily recording and quarterly reporting of maximum hourly throughput for the truck dump, rail dump and product loadout.
- testing to confirm the PM and PM10 emission factors and capture efficiency that were assumed in the potential to emit calculations.
- a permit condition that requires 98.9% control of PM and PM10 during product

- loadout.

Response 12: IDEM has evaluated the emission calculations on Page 5 of 14 for the grain handling/transferring from the existing elevator to the ethanol plant. The source indicated that the grain will go through a day bin for processing to the ethanol plant, and will be controlled by baghouse S-30, instead of uncontrolled. Therefore, the fugitive emission calculations from handling and receiving have been deleted. The revision is as follows:

Ethanol Plant Various Handling Processes

Emission Point Description	Processing Rate	PM Emission Factor	PM10 Emission Factor	Emission Factor	Emission Control System	Capture Efficiency	Control Efficiency	PM Uncontrolled Emissions	PM10 Uncontrolled Emissions	PM Controlled Emissions	PM10 Controlled Emissions
	ton/year	(lb/ton)	(lb/ton)	Source	Type	%	%	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
~~Fugitive fr. Grain Receiving~~	~~1,130,000~~	~~0.035~~	~~0.035~~	~~AP-42~~		~~No control~~	~~No control~~	~~19.78~~	~~19.78~~	~~3.96~~	~~3.96~~
~~Grain Handling~~	~~1,130,000~~	~~0.061~~	~~0.061~~	~~AP-42~~		~~No control~~	~~No control~~	~~34.47~~	~~34.47~~	~~3.45~~	~~3.45~~
Grain Handling to Ethanol day bin	**1,130,000**	**0.061**	**0.034**	**AP-42**	**S-30**	**100%**	**90%**	**34.47**	**19.21**	**3.45**	**1.92**
Grain Scalping/Separator	1,100,000	0.012	0.006	AP-42	S-30	80%	90%	23.57	11.79	6.60	3.30
Fugitive Grain Scalping/Separator	1,100,000	0.012	0.006	AP-42		no control	no control	6.60	3.30	1.32	0.66
Hammermilling	1,100,000	0.012	0.006	AP-42	S-30	100%	90%	66.00	33.00	6.60	3.30
DDGS Cooling Drum	356,880	0.018	0.18		S-70	100%		3.21	3.21	3.21	3.21
DDGS Storage/Loadout	356,880	0.086	0.029		S-90	80%	90%	15.35	5.17	4.30	1.45
						TOTAL		**149.20** **~~168.97~~**	**75.68** ~~110.71~~	**25.48** ~~29.43~~	**13.84** ~~19.32~~

The permit, as proposed, includes stack testing of all baghouses, including baghouse S-30, to verify its emission rate. PM and PM10 limits were also included in Condition D.1.4(a) and (b). See Response 7.

Condition D.2.3 has also been revised to include a limit on the amount of grain being handled by the source as follows:

D.2.3 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(a) The PM emissions from the following emission units shall not exceed the following emission limits:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Grain Elevator - **Receiving**	Baghouse #1	~~1.8~~ **0.013**
Grain Drying	Screen Enclosure	~~0.95~~ **0.24**
Grain Internal Handling	Baghouse #2	**0.043**

Compliance with these PM limits in combination with the PM emission limits in Condition D.1.4, limits the PM emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable.

(b) The PM10 emissions from the following emission units shall be limited as follows:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Grain Elevator - **Receiving**	Baghouse #1	~~1.8~~ **0.013**
Grain Drying	Screen Enclosure	~~0.95~~ **0.24**
Grain Internal Handling	Baghouse #2	**0.043**

Compliance with these PM10 limits in combination with the PM10 emission limits in Condition D.1.4, limits the PM10 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

(**c) The grain throughput to the grain elevator shall be limited as follows:**

(1) Straight truck controlled pit shall be limited to 2,000,000 bushels per twelve consecutive month period with compliance determined at the end of each month.

(2) Hopper truck and railcar controlled pit shall be limited to 37,285,716 bushels per twelve consecutive month period with compliance determined at the end of each month.

(3) Hopper truck uncontrolled pit shall be limited to 1,000,000 bushels per twelve consecutive month period with compliance determined at the end of each month.

Compliance with these limits in combination with PM and PM10 limits in Condition D.1.4, limits the PM and PM10 emissions from the entire source to less than 100 tons per year each, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

~~(c)~~ **(d)** The NOx emissions from the 16.5 million British thermal units per hour (MMBtu/hr) grain dryer shall not exceed 100 pounds per million cubic feet (lb/MMCF) and the CO emissions shall not exceed 84 pounds per million cubic feet (lb/MMCF) when using natural gas. Natural gas fuel usage shall be limited to 42,900,000 cubic feet per twelve consecutive month period with compliance determined at the end of each month. Compliance with these limits in combination with the limit in Condition D.1.4, limits the NOx and CO emissions from the entire source to less than 100 tons per year for each pollutant, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not ~~be~~ applicable.

D.2.11 Record Keeping Requirements

(a) To document compliance with Condition D.2.8, the Permittee shall maintain records of all daily visible emission notations of the stack #1.

(b) To document compliance with Condition D.2.9, the Permittee shall maintain records of the pressure drop across the baghouses used in conjunction with the grain elevator.

(c) To document compliance with Condition D.2.3(c), the Permittee shall maintain records of the grain throughput to the elevator.

~~(c)~~ **(d)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit

Comment 13: Insignificant Activities

The facility includes a number of insignificant activities, listed in the Permit in Section A.4 and in the TSD at 3. These insignificant activities must be included in the calculation of potential to emit to determine if major source thresholds have been met. However, the Permit does not establish any emission limits for these activities, require any monitoring of their emissions, or require that they be tallied along with emissions from other sources when determining if the potential to emit is below major source thresholds. Thus, the Permit must establish emission restrictions, monitoring and recording keeping requirements for these emission units and include emissions from these emission units in the facility wide potential to emit calculations.

Response 13: The following condition was added in Condition D.1.4 to address the cooling tower:

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

(c) The PM/PM10 emissions from the cooling tower shall not exceed 3.75 pounds per hour, and 16.44 tons per year. Compliance with this limit shall render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 not applicable.

The VOC potential to emit from insignificant activities in Section A.4 has been included in the sourcewide PTE, except for the various process tanks, including stillage, syrup, cook water, liquefaction, and whole stillage. PTE calculation for these process tanks has been made, see Page 15 of 15 of TSD App A.

The one (1) pressure storage tank does not emit any pollutant because it is designed to operate in excess of 204.9 kPa.

The one (1) vertical fixed roof tank, identified as Tank-1 has a negligible VOC emissions of 0.005 ton per year.

Comment 14: Permit Limits Are Not Enforceable

The Applicant is attempting to avoid the requirements of PSD, MACT, and the Title V operating permit program by limiting the Project's potential to emit ("PTE") with production, operational, and emission limitations. The Permit must meet certain minimum requirements to qualify for a FESOP. These include: (1) emission limits and standards that assure that it is not a major source and that "assure compliance with all applicable requirements" (326 IAC 2-8-4); "testing, monitoring, reporting and record keeping requirements sufficient to assure compliance with the terms and conditions of the FESOP;" (326 IAC 2-8-5); and (3) be federally enforceable by the U.S. EPA and citizens under the CAA (326 IAC 2-8-6). As discussed below, the Permit does not conform with these requirements.

FESOP limits must be federally enforceable. 326 IAC 2-8-6. A limit is federally enforceable if it is contained in a permit that is federally enforceable and if it is enforceable as a practical matter. *See* U.S. v. Louisiana-Pacific Corp., 682 F. Supp. 1122, Civil Action No. 86-A-1880 (D. Colorado, March 22, 1988).

Practical enforceability is an implied requirement of federal enforceability. Practical enforceability means the source must be able to show continuous compliance with each limitation or requirement. The EPA has repeatedly concluded that "in accordance with the 1989 potential to emit policy, when an emission limit is taken to restrict potential to emit [as in this Permit], some type of continuous monitoring of compliance with that emission limit is required."

IDEM's regulations also require that the FESOP include "monitoring and related record keeping and reporting requirements which assure that all reasonable information is provided to evaluate **continuous compliance** with the applicable requirements." 326 IAC 2-8-4(3) (emphasis added). As discussed below, the proposed monitoring is not adequate to assure continuous compliance.

The EPA has concluded that "in order for emission limitations to be Federally enforceable from the practical stand point, they must be short term and specific so as to enable the Agency to determine compliance at any time." The NSR Manual includes a chapter on "Effective Permit Writing." This chapter explains that emission and operational limits "must be clearly expressed, easily measurable, and allow no subjectivity… Such limits should be of a short term nature, continuous and enforceable." NSR Manual, p. H.5. Many conditions contained in the Permit violate these characteristics.

An appendix to the NSR Manual further clarifies the meaning of enforceability. It notes: Compliance with any limitation must be able to be established at any given time. When drafting permit limitations, the writer must always ensure that restrictions are written in such a manner that an inspector could verify instantly whether the source is or was complying with the permit conditions. Therefore, short-term averaging times on limitations are essential.

Emission limits should reflect operation of the control equipment, be short-term, and, where feasible, the permit should require a continuous emissions monitor. Blanket emissions limits alone (*e.g.*, tons/yr, lb/hr) are virtually impossible to verify or enforce, and are therefore not enforceable as a practical matter.

When permits contain production or operational limits, they must also have requirements that allow a permitting agency to verify a source's compliance with its limits. These additional conditions dictate enforceability and usually take the form of recordkeeping requirements.

NSR Manual, pp. c.3–c.5.

Response 14: Please see Responses 1, 9, 10, 12 and 15 in this addendum, which include new conditions to limit the PTE from emission units, that are not limited in the proposed permit and added additional limits to other emission units. Record keeping and reporting requirements have been added for the additional limits included in the permit.

Comment 15: Monitoring Is Not Adequate To Ensure Enforceability

Permit limits are enforced through monitoring. The hierarchy for specifying monitoring to determine compliance is: (1) continuous direct measurement where feasible; (2) initial and periodic direct measurement where continuous monitoring is not feasible; (3) use of indirect monitoring, e.g., surrogate monitoring, where direct monitoring is not feasible; and (4) equipment and work practice standards where direct and indirect monitoring are not feasible. NSR Manual, p. I.3.

The Permit does not follow this hierarchy. It has failed to specify continuous direct monitoring where feasible (*e.g.*, CO and VOC emissions from RTOs); it has failed to require sufficient direct periodic monitoring where feasible (e.g., all units with no testing or testing only once every 5 years); and it has failed to specify indirect monitoring where feasible (surrogate parameters, e.g., dryer, cooler and cyclone operating conditions to monitor performance). The Permit should be revised to strengthen all monitoring provisions. The comments below discuss monitoring, testing, and enforceability for a number of representative emissions sources.

Test Methods Not Identified

A FESOP permit must contain "all emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated under Section 504(b) or 114(a)(3) of the CAA." 326 IAC 2-8-4(3)(A)(i).

The Permit does not identify any of the test methods that will be used to determine compliance with Permit conditions. Instead, it allows these to be identified outside of the permitting process in a separate protocol document that is not subject to public comment. This prevents members of the public from evaluating whether the proposed monitoring is adequate to determine compliance with the proposed limits and assuring that the potential to emit remains below major source thresholds.

This is a concern, for example, with both VOCs and PM10. VOCs can be measured by several methods, e.g., Method 25A and by separately speciating individual compounds. The former method underestimates emissions by about a factor of three. The Permit is silent on whether total PM10 or only filterable PM10 would be measured for combustion sources.

Fuel Sulfur Content Is Not Limited

The fired sources will burn either natural gas, waste gases, or fuel oil (fire water pump). The TSD potential to emit calculations are based on assumptions about sulfur content of the combusted fuel. However, the Permit does not require testing of SO_2 emissions (for most sources and only limited testing for some), does not specify fuel sulfur content limits, and does not require that fuel sulfur content be monitored.

Visible Emissions

Several conditions require "visible emission notations" of stack exhaust by a "trained employee," presumably to assure compliance with PM/PM10 limits during times when

mass testing is not conducted. See, e.g., Permit, Sec. D.1.14, p. 32 and D.1.23, p. 34. This testing is not adequate for several reasons.

First, the testing is subjective. Different observers could make different notations. This problem would be cured if a recognized and repeatable test method were used to confirm the presence or absence of visible emissions and to quantify their magnitude. At a minimum, the Permit should be revised to require a Method 9 test once a day during maximum operations.

Second, the Permit does not require that a relationship be established between visible emissions and the underlying PM/PM10 mass emission rates that restrict potential to emit. Thus, there is no assurance that the restriction on potential to emit is achieved even if no visible emissions are present.

Third, the definition of "trained employee" does not require a recognized and certified training program. Permit, Section D.4.18(d). The Permit should be revised to require that the "trained employee" successfully complete a training course equivalent to certification in Method 9.

Fourth, the Permit does not identify the information that would be recorded beyond a notation as to whether the emissions are normal or abnormal. Condition D.4.17(a) should be revised to require that the following information be recorded: date, time of day, weather conditions.

Fifth, the observations are only made during normal daylight hours. This excludes all non-daylight hours, excluding from compliance many operating hours. This does not assure continuous compliance, as required to qualify for a FESOP.

Thermal Oxidizer Temperature

The Permit requires continuous monitoring of thermal oxidizer temperature and further requires that the unit be operated at or above a 3-hour average temperature of 1450 ^{0}F or some other value determined in a stack test. Permit, Section D.1.14, p. 32. There are two problems with this requirement.

First, the thermal oxidizer temperature determines the amount of emissions. Temperatures higher than design can significantly increase NOx while temperatures lower than design can significantly increase VOCs and aldehydes. Thus, we recommend that the Permit be revised to require testing to establish an operating range within which all limits are met and that this range be set as an enforceable permit condition.

Second, the Permit does not explain what steps would be taken if the temperature exceeds the level(s) established during testing. The Permit should be revised to require troubleshooting contingency and response steps for out of range operation. The Permit should also be revised to state that failure to take such steps is a violation of the Permit.

Response 15: Additional record keeping and reporting requirements have been added to the permit as a means to demonstrate compliance with the additional throughput, fuel usage, and limits on the hours of operation included in the permit. Condition D.1.23 was revised to include the record keeping requirements for the methanator operating hours and DDGS fuel usage as follows:

D.1.23 Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 12] [40 CFR 60, Subpart Db]

(a) Pursuant to 326 IAC 2-8-4(3), the Permittee shall record and maintain records of the following information:

(1) To document compliance with Condition D.1.14, the Permittee shall maintain records of daily visible emission notations of the stacks S-30, S-90, and S-10.

(2) To document compliance with Condition D.1.16, the Permittee shall maintain continuous temperature records for the Recuperative Thermal Oxidizers (C-10 and C-11) and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(3) To document compliance with Condition D.1.15, the Permittee shall maintain daily records of the duct pressure or fan amperage for the RTOs (C-10 and C-11).

(4) To document compliance with Condition D.1.17, the Permittee shall maintain records of the pressure drop across the baghouses used in conjunction with the hammermills, scalpers, DDGS cooling drum, and DDGS loadout.

(b) Pursuant to 40 CFR 60.49b(d), the Permittee shall record and maintain records of the amounts of each fuel combusted by the recuperative thermal oxidizers/heat recovery steam generators (C-10 and C-11) during each day and calculate the annual capacity factor individually for natural gas for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(c) Pursuant to 40 CFR 60.49b(g), the Permittee shall maintain records of the following information for each recuperative thermal oxidizer/heat recovery steam generating unit operating day:

(1) Calendar date.

(2) The average hourly nitrogen oxides emission rates (expressed as NO_2) (ng/J or lb/million Btu heat input) measured or predicted.

(3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each recuperative thermal oxidizer/heat recovery steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.

(4) Identification of the recuperative thermal oxidizers/heat recovery steam generating units operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards under 40 CFR 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken.

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.

(7) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted.

(8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.

(9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(d) To document compliance with D.1.4(g), the Permittee shall maintain records of the number of hours that the biomethanator operates each month.

(e) To document compliance with D.1.4(c), the Permittee shall maintain monthly records of the amount of natural gas and biogas used.

(f) To document compliance with D.1.4(e)(3), the Permittee shall maintain monthly records of the amount of denatured ethanol loaded out from both the truck loading rack and the railcar loading rack combined.

(g) To document compliance with D.1.4(e)(3), the Permittee shall maintain records of the number of hours that the truck loading rack and railcar loading rack operate each month.

~~(d)~~ **(h)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

The following reporting form was added in the permit, for the NOx limit in Condition D.1.4. This limit will also limit the VOC, CO, and PM emissions from the Methanator:

Table 5 – Biomethanator Flare Limit - 500 operating hours per twelve month period

Month	Column 1		Column 2		Column 1 + 2	
	Hours Operated	Equivalent NOx Emissions	Previous 11 Months		12 Month Total	
			Hours Operated	Equivalent NOx Emissions	Hours Operated	Equivalent NOx Emissions
Month 1						
Month 2						
Month 3						

Methodology:
Emissions, tons/yr = heat input, MMBtu/hr * Ef, flaring + pilot * hours operated/month *

The following reporting forms were added in the permit, for VOC limit in Condition D.1.4:

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

FESOP Quarterly Report

Source Name: **The Andersons Clymers Ethanol, LLC**
Source Address: **County Roads 300S and 350 W, Logansport, IN 46947**
Mailing Address: **P.O. Box 119, Maumee, OH 43537**
NSR/FESOP No.: **017-21536-00023**
Facility: **Loading Racks (Truck and Railcars Combined)**
Parameter: **VOC Emissions**
Limit: **110,000,000 million gallons per twelve month period.**

QUARTER: _____YEAR:_____

Month	Column 1	Column 2	Column 1 + 2
	Ethanol Loaded This Month	Ethanol Loaded Previous 11 Months	Ethanol Loaded Total 12 Months
Month 1			
Month 2			
Month 3			

☐ **No deviation occurred in this quarter.** _____

☐ **Deviation/s occurred in this quarter.** _____

☐ **Deviation has been reported on:**_____

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: The Andersons Clymers Ethanol, LLC
Source Address: County Roads 300S and 350 W, Logansport, IN 46947
Mailing Address: P.O. Box 119, Maumee, OH 43537
NSR/FESOP No.: 017-21536-00023
Facility: Loading Racks (Truck and Railcars Combined)
Parameter: VOC Emissions
Limit: 1690 operating hours per twelve month period.

QUARTER: _____YEAR:_____

Month	Column 1	Column 2	Column 1 + 2
	Hours Operated This Month	Hours Operated Previous 11 Months	Hours Operated Total 12 Months
Month 1			
Month 2			
Month 3			

☐ **No deviation occurred in this quarter. _____**

☐ **Deviation/s occurred in this quarter. _____**

☐ **Deviation has been reported on:_____**

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

Attach a signed certification to complete this report.

The following reporting form was added in the permit, for PM and PM10 limits in Condition D.1.4:

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

FESOP Quarterly Report

Source Name: **The Andersons Clymers Ethanol, LLC**
Source Address: **County Roads 300S and 350 W, Logansport, IN 46947**
Mailing Address: **P.O. Box 119, Maumee, OH 43537**
NSR/FESOP No.: **017-21536-00023**
Facility: **Grain Elevator**
Parameter: **PM and PM10 Emissions**
Limits: **Straight truck controlled pit – 2,000,000 bushels per twelve month period.**
Hopper truck and railcar controlled pit – 37,285,716 bushels per twelve month period.
Hopper truck uncontrolled pit – 1,000,000 bushels per twelve month period.

QUARTER: _____YEAR:_____

Month	Column 1			Column 2			Column 1 + 2		
	Grain Handled This Month			Grain Handled Previous 11 Months			Grain Handled 12 Months		
	Straight truck controlled pit	Hopper truck and railcar controlled pit	Hopper truck uncontrolled pit	Straight truck controlled pit	Hopper truck and railcar controlled pit	Hopper truck uncontrolled pit	Straight truck controlled pit	Hopper truck and railcar controlled pit	Hopper truck uncontrolled pit
Month 1									
Month 2									
Month 3									

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

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

Attach a signed certification to complete this report.

The DDGS dryers are controlled by the RTOs which have testing requirements, and the DDGS cooling drum testing is part of the baghouse S-70 testing requirements. Surrogate parameters for the RTOs and all baghouses will be established during the stack tests. These parameters will be continuously monitored to demonstrate compliance with the PM and PM10 limits. The cooling tower is not controlled but emissions have been limited in pounds per hour, see Response 12.

IDEM does not include the specific test method for each test requirement in the permit. The Permittee is obligated to conduct testing to demonstrate compliance with the applicable emission limitations in accordance with Section C - Performance Testing of this FESOP. Section C specifies that 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. Additionally, the applicant is required to submit a protocol prior to testing. The protocol explains how the testing will be performed and which methods will be used. IDEM staff review and approve the protocol before any testing is approved. IDEM believes this is sufficient to ensure that the appropriate test method is utilized.

No changes were made as a result of this comment.

IDEM believes that a five (5) year test cycle, when paired with regular monitoring of operational parameters, is sufficient to establish continuous compliance with the emission limitations established in the permit.

No changes were made to the permit as a result of this comment.

IDEM has determined that it is sufficient to require the Applicant to determine compliance with the rolling annual denatured loadout average at the end of each month. This condition was added in the proposed permit, see Response 2. For this type of annualized throughput limit, it is unnecessary to establish compliance on a daily basis.

The sulfur content limit of the fuel used by the emergency diesel pump has been added in Condition D.3.1. The revision is as follows:

D.3.1 Prevention of Significant Deterioration (PSD) and Part 70 Operating Permit [326 IAC 2-2] [326 IAC 2-8]

(a) The NOx emissions from the 300 horsepower (Hp) diesel-fired emergency pump shall be limited to 8.92 pounds per hour and the operation of this pump shall be limited to 500 operating hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The sulfur content of the diesel fuel used by the emergency pump shall be limited to a maximum of 0.5%.

Compliance with ~~this limit~~ **these limits** in combination with the NOx limits in Conditions D.1.4 and D.2.3, limit the NOx emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) and 326 IAC 2-7, Part 70 Operating Permit not applicable.

D.3.2 Record Keeping Requirements

(a) To document compliance with Condition D.3.1, the Permittee shall maintain records of the number of hours that the emergency pump operates each month, **and the sulfur content of the fuel used each month.**

(b) All records shall be maintained in accordance with Section C - General Record Keeping

Requirements, of this permit.

IDEM establishes a minimum temperature requirement to ensure that the TO operates at or above the temperature at which the unit has demonstrated compliance with the required control efficiency. There is an economic disincentive to operate at temperatures substantially higher than the established minimum. In addition, the temperature could increase as a result of sudden variations in VOC concentrations, which would be considered proper operation, and should not be considered a deviation. No changes were made as a result of this comment.

With regard to visible emission notations, the calibration of what is normal and abnormal is established in the training of the employee on "the appearance and characteristics of normal visible emissions for that specific process." Because the emission characteristics vary with the type of process, it is not reasonable to establish a generic definition of "normal". This method of determining whether visible emissions are "normal" is very similar to the compliance monitoring methods cited by EPA's Portland Cement MACT, 40 CFR 63, Subpart LLL for determining whether raw mills and finish mills are operating properly. Please refer to 40 CFR 63.1350(e). Furthermore, the concept of "practical enforceability" should be applied to an emission limitation or standard. Monitoring requirements should be judged based upon their ability to ensure compliance with those emission limitations or standards. In this case, the emission limitations are the PM and opacity limitations established in 326 IAC 5-1, 326 IAC 6-3-2, and the PM and PM10 limits necessary to render PSD not applicable. IDEM, OAQ considers the visual emissions notations of this permit to be part of an overall compliance monitoring strategy that is sufficient to ensure compliance with these rules. Requiring Permittees subject to the visual emissions notation condition to be trained in Method 9 monitoring, is overly burdensome to the source and not necessary. During IDEM, OAQ inspections, the inspector will perform Method 9 monitoring to also ensure compliance with 326 IAC 5-1. At that time, the inspector will review the visual emission notation records and establish a correlation between his Method 9 result and whether the source identifies the emissions as "normal" or "abnormal". He will be able to establish compliance with 326 IAC 5-1 over the time period covered by the records, based on the records and his correlation to the Method 9 results. No changes were made as a result of this comment.

Comment 16: <u>Subsumed Permit Conditions Should Be Deleted to Avoid Confusion</u>

The emission limits in Section D.1.4(a) subsume the emission limits in Section D.1.6. Similarly, the emission limits in Section D.1.4(a) subsume the emission limits in D.1.8. We recommend that subsumed emission limits should be deleted so that it is perfectly clear that the most restrictive emission limits apply. If the subsumed sections are not deleted, we recommend that a provision explaining that the most restrictive emission limits apply should be added.

Response 16: The Permittee is required to comply with all the state and federal rules applicable to the source, based on this, permits issued by the IDEM must cite conditions pertaining to all of these applicable rules.

No changes have been made as a result of this comment.

On January 11, 2006, IDEM held a public hearing in Logansport, Indiana. At this hearing several comments have been made regarding this proposed New Source Construction/FESOP. A summary of the comments made and IDEM's responses are as follows:

John Hampton (Fort Wayne, Indiana)

Comment 1: You are claiming that the permit is not a Part 70 permit, that it is only a Federally Enforceable State Operating Permit, and therefore, a minor source of pollution. How can the source be considered a small source of emissions when a lot of the pollutants like the HAPs or the hazardous air pollutants are emitted? If the source runs full production, it will exceed 25 tons of combined HAPs a year, including the VOCs. Without any monitoring devices in place, the source can overproduce and be a major source of pollution. IDEM hasn't established the proper Best Available Control Technology for this source. The permit required 98 percent instead of 99 to 99.5 percent as required in Minnesota, Wisconsin, and other states**.**

Response 1: The Andersons Clymers ethanol plant, including the existing grain elevator has a potential to emit for each criteria pollutant of greater than 100 tons per year, single HAP more than 10 tons per year, and combined HAPs more than 25 tons per year. However, the source chose to operate under a Federally Enforceable State Operating Permit, where each criteria pollutant is limited below 100 tons per year, single HAP at less than 10 tons per year, and combined HAPs at less than 25 tons per year. To comply with these limits, the source has limited throughput, fuel usage, hours of operation, and will utilize control equipment. The source is required to monitor, record, and report the throughputs on various equipment, fuel usage, and hours of operation on a monthly basis. Stack testing is also required to establish operating parameters for the control equipment (baghouses, scrubber, flare, and oxidizers) that will be monitored continuously. Compliance with these requirements will assure that the source potential to emit will stay below the major thresholds for Part 70 and PSD.

The 98% level of control efficiency required as BACT in the permit is consistent with BACT determinations made in Indiana and in other States. IDEM has not identified any BACT requirements that are more stringent than 98% for ethanol production facilities. IDEM has confirmed that there are at least three facilities in California that have a higher control efficiency requirement than 98% (synthetic minor limits), however based on discussions between IDEM and the San Joaquin Valley Unified Air Pollution Control District it has been confirmed that these facilities have not demonstrated compliance with these limits through stack testing. IDEM is aware that sources have achieved control efficiencies during testing that exceed 98%. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that 99% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

Comment 2: Matthew Buczolich (South Bend, Indiana)

The proposed permit will result in environmental degradation in the Cass County, Indiana, an area which may very well jeopardize future jobs by making the environment less desirable for anyone to live and derive an income in the area. Most importantly, the proposed permit will create a less favorable environmental condition to allow the future economic development. The continued degradation of air quality can and has caused construction moratoriums and other restrictions on growth which has reduced future employment opportunities for citizens in the state of Indiana. The individuals and their families who are represented by the Plumbers and Pipefitters who work and live in this community will suffer the impact of projects that detrimentally affect their environment. Our major concern is that we want to make sure that this project goes on in an environmentally safe purpose and to make sure that IDEM takes care of that project.

Response 2: IDEM's final permit decision is going to require the facility to meet all technology and health based standards as required by law and will be protective of public health. The applicant has the obligation to show in their application that they will comply with all federal and state laws regulating air pollution, and IDEM in turn has a legal obligation to issue them a permit if they have indeed shown that they will comply with all federal and state laws regulating air pollution.

Comment 3: William Mills (150 South in Cass County)

Based on the permit limit of 1600 hours per 12 consecutive month period, and loading rates of 600 gpm for the trucks and 1200 gpm for railcars, the source can potentially produce 172 million gallons per year. This could potentially exceed the major thresholds.

Response 3: IDEM has evaluated the calculations and agrees that the source can potentially produce 172 million ethanol per year, based on the proposed limits. Therefore, these limits have been changed to the following:

D.1.4 PSD Minor Limits and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

~~(d)~~ **(e)** The VOC emissions from the following emission units shall be limited as follows:

(1) The VOC emissions from the DDGS Cooling Drum shall be limited to 3 pounds per hour.

(2) The VOC emissions from the fermentation scrubber shall be limited to 7.5 pounds per hour.

(3) The VOC emissions from the **loading racks shall be limited as follows:**

(i) Combined VOC emissions from the truck loading rack and the railcar loading rack shall not exceed 2.70 lbs/hr.

(ii) The truck loading rack and the railcar loading rack shall be limited to a combined throughput of 110,000,000 gallons of ethanol per twelve consecutive month period with compliance determined at the end of each month.

(iii) The truck loading rack and the railcar loading rack shall be limited to 1690 operating hours per twelve consecutive month period with compliance determined at the end of each month.

(iv) The railcar loading rack and the truck loading rack shall

utilize only a submerged fill loading system.

~~flare for both truck and rail shall not exceed 2.03 lbs/hr. The loading rack shall also be limited to 1600 operating hours per twelve consecutive month period at be limited to a the maximum loading rates of 600 gpm for trucks and 1200 gpm for railcars.~~

Comment 4: Jim Brugh (1315 East Market Street, Logansport)
IDEM has a duty to monitor the ambient air quality in this county especially since the proposed ethanol plant will be located close to ESSROC.

In an EPA press release, Cargill was sued by ten states, including Indiana and in the settlement Cargill was required to control the VOC emissions. Would the technology standard required in these consent decrees also be applicable to all new ethanol plants under construction?

Response 4: IDEM does operate some monitors in various places throughout the state. The nearest ozone monitor to Cass County is located in Flora City in Carroll County. The annual average reading for years 2003 to 2005 was 75 parts per billion (ppb) which is below the ozone standard of 85 ppb.

The nearest PM2.5 monitor is located in Kokomo in Howard County. The annual average reading for years 2002 to 2004 was 14.3 $\mu g/m^3$, which is below the PM2.5 standard of 15 $\mu g/m^3$.

The source is not required to monitor the ambient air quality in the area because it is not a major source under 326 IAC 2-2, PSD.

IDEM is aware of the DOJ settlements reached with several ethanol production plants in Minnesota and elsewhere. These settlements sought to correct compliance issues related to uncharacterized or underestimated VOC and CO emissions at existing ethanol production plants. These plants were traditionally permitted as minor sources of VOC and CO, based on an industry-wide failure to identify several units utilized at ethanol production plants as VOC and CO emitters. The U. S. EPA, in conjunction with the DOJ, have worked with this industry to address the historical problems with these existing plants and, where appropriate, required facilities to install additional controls on several of these units. IDEM has evaluated the proposed Andersons Clymers ethanol plant and determined that the uncontrolled VOC and CO emissions would in fact be greater than the PSD major source threshold of 100 tons per year. Andersons Clymers will be required to install and operate emission controls at several of the emission units at this facility to ensure that the controlled emission levels are below the PSD major source threshold. In addition, even though the source will be minor under PSD, IDEM has evaluated this source under Indiana's VOC regulations, that require even relatively small sources of VOC emissions to perform an analysis of BACT, and determined that the BACT requirements for this project would include the use of a thermal oxidizer, a wet scrubber, and an enclosed flare to control VOC emissions from this source. These controls will be required to operate at a level of efficiency that reduces VOC emissions by at least ninety-eight percent (98%). The majority of the settlements reached by the DOJ and these ethanol production plants required that VOC emission to be reduced by at least 95%. Therefore, this permit requires even more stringent requirements than the DOJ.

Comment 5: Jesse Hepley (Logansport)
"He was concerned that Indiana builders might not build this plant."

Response 5: IDEM has no authority to regulate who builds this plant.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	**The Andersons Clymers Ethanol, LLC**
Source Location:	**County Roads 300S and 350W, Logansport, IN 46947**
County:	**Cass**
SIC Code:	**2869, 5153**
NSR/FESOP:	**017-21536-00023**
Permit Reviewer:	**Aida De Guzman**

The Office of Air Quality (OAQ) has reviewed a new source review and FESOP application from The Andersons Clymers Ethanol, LLC relating to the operation of a grain terminal and construction of an ethanol production plant, which consists of the following emission units:

Proposed Emission Units and Pollution Control Equipment

Ethanol Production Plant:

(a) Ethanol Production Plant with a maximum production rate of 110,000,000 gallons of ethanol per year:

(1) One (1) day bin with a maximum throughput of 7,500 bushels per hour.

(2) One (1) grain scalper, with a maximum throughput of 1,100,000 tons per year, controlled by baghouse S-30.

(3) Four (4) hammermills each with a maximum throughput of 100 tons per hour controlled by baghouse S-30.

(4) One (1) cook water tank with a capacity of 374,000 gallons.

(5) One (1) slurry mixer receiver (blend) tank with a capacity of 470 gallons. The emissions from this tank will be exhausted indirectly to the two Recuperative Thermal Oxidizers (RTOs) (C-10 and C-11) through the slurry tanks.

(6) Two (2) slurry tanks each has a capacity of 25,000 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(7) Two (2) cook tubes each with a capacity of 5,200 gallons.

(8) One flash tank with a capacity of 4,500 gallons.

(9) One syrup tank with a capacity of 180,000 gallons.

(10) One fermentation process, with a maximum throughput of 13,000 gallons per hour, controlled by CO_2 scrubber S-40, which includes:

(A) Seven (7) fermenters, each with a capacity of 807,000 gallons.
(B) Two (2) liquefaction tanks each with a capacity of 128,400 gallons.

(C) Two (2) yeast tanks each with a capacity of 13,500 gallons. The emissions from these tanks will be exhausted to the two RTOs (C-10 and C-11).

(11) One distillation and evaporation process controlled by the two RTOs (C-10 and C-11) with a maximum throughput of 1,100,000 tons per year consisting of the following:

(A) One (1) beerwell with a capacity of 1,080,000 gallons.
(B) One beer column.
(C) One side stripper.
(D) Six (6) molecular sieve condensers.
(E) Six (6) centrifuges.
(F) Two (2) centrate tanks with a capacity of 1,690 gallons each.
(G) Eight (8) evaporators.
(H) One (1) stillage tank with a capacity of 374,000 gallons.

(12) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 43 tons per hour, controlled by the two RTOs (C-10 and C-11). This process consists of the following:

(A) Four (4) DDGS dryers, identified as Dryers A, B, C, and D, each dryer has a heat input capacity of 45 MMBtu/hr or a total heat input capacity of 180 MMBtu/hr, with a total drying rate of 356,880 tons of DDGS per year.
(B) One (1) DDGS cooling drum with a maximum throughput of 356,880 tons of DDGS per year, controlled by a baghouse, identified as S-70.
(C) One (1) four cell cooling tower with a circulation rate of 3,000,000 gallons per hour.
(D) One DDGS truck/rail loadout with a maximum capacity of 500 tons per hour, controlled by a baghouse, identified as S-90.

(13) One ethanol truck and railcar loading rack with a maximum throughput of 110,000,000 gallons per year of ethanol, controlled by a natural gas fired flare.

(14) Two (2) Recuperative Thermal Oxidizers (RTOs)/heat recovery steam generators, identified as C-10 and C-11, exhausting to stack S-10 using natural gas and process waste gases, each with a maximum heat input capacity of 122 MMBtu/hr.

(15) One (1) 300 horsepower (Hp) diesel-fired emergency pump.

(16) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-2 that will store 190 proof ethanol with a capacity of 225,000 gallons.

(17) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-3 that will store 200 proof ethanol with a capacity of 225,000 gallons.

(18) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-4 that will store natural gasoline with a capacity of 91,000 gallons.

(19) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-5 that will store denatured ethanol with a capacity of 2,114,000 gallons.

(20) One (1) fixed roof tank equipped with an internal floating roof, identified as Tank-6 that will store denatured ethanol with a capacity of 750,000 gallons.

Permitted Emission Units and Pollution Control Equipment

Grain Terminal:

(b) Grain Terminal with a maximum capacity of 1,172,000 tons of grains per year:

(1) One (1) truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1.

(2) One (1) rail/truck dump hopper, constructed in 1974, enclosed on 2 sides with particulate emissions controlled by a baghouse, identified as # 1.

(3) One (1) rail car/truck loading site, constructed in 1974, with no emission controls.

(4) One (1) Berico natural gas-fired dryer, constructed in 1974, with a maximum throughput capacity of 3,000 bushel per hour and a maximum heat input capacity of 16.5 million British thermal units (MMBtu) per hour with screen house enclosure.

(5) One (1) grain cleaner, constructed in 1974, rated at 15,000 bushels per hour with particulate emissions controlled by a baghouse, identified as # 2.

(6) Four million (4,000,000) bushel grain storage capacity in several steel tanks with no emission controls.

(7) Four hundred thousand (400,000) bushel grain storage capacity in concrete silos with particulate emissions controlled by a baghouse, identified as # 2.

(8) Two (2) grain legs, constructed in 1974, with a maximum capacity of 7,500 bushel per hour, with particulate emissions controlled by a baghouse, identified as # 2.

(9) One (1) hopper bottom truck grain receiving process, constructed in 2002, consisting of one (1) enclosed drag conveyor with a maximum design throughput of 1,000,000 bushels of corn and soybeans per year, with particulate emissions controlled by one (1) conveyor enclosure.

Insignificant Activities

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

(a) One (1) vertical fixed roof storage tank, identified as Tank-1 that will store corrosion inhibitor with a capacity of 3,008 gallons.

(b) One (1) package anaerobic biological water treatment system, identified as methanator. The gas produced by this system will be used to supplement the fuel used in two of the four dryers (Dryers A and C). When these dryers are not in operation, the gas is routed to the methanator flare system (S-60).

(c) One (1) pressurized storage tank and associated piping for anhydrous ammonia.

(d) Natural draft cooling towers not regulated under a NESHAP.

(e) Various process tanks, including thin stillage, syrup, cook water, liquefaction, and whole stillage.

Source Definition

The Andersons Clymers Ethanol plant consists of the permitted grain terminal plant and the proposed ethanol plant; both are located at the following address and are considered one source:

County Roads 300S and 350W, Logansport, IN 46947

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
S-10	RTOs	125	10	220,000	
S-30	Hammermill Baghouse	40	2.4	22,000	
S-40	CO2 Scrubber	75	2.25	11,000	
S-50	Truck and Rail Loadout Flare	36	3	34,000	
S-60	Methanator Flare	30	1.4	6,400	
S-70	Cooling Drum Baghouse RTO Bypass	18	4 x 4	14,000	
F-80	Cooling Tower	40	25.3	3,120,000	
S-90	DDGS Loadout Baghouse	40	2.16	9,100	
S-100	Emergency pump	8	0.25	1,740	

Existing Approvals

The source has been operating under the previous MSOP 017-20237-00023, issued on June 20, 2005 with an expiration date of June 20, 2010.

Enforcement Issue

There are no pending enforcement actions related to this modification.

Recommendation

The staff recommends to the Commissioner that the NSR/FESOP 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.

A complete application for the purposes of this review was received on July 28, 2005.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

Potential to Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit 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, inclulding 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, the department, or the appropriate local air pollution control agency."

Pollutant	Potential to Emit (tons/yr)
PM	653.20
PM-10	551.32
SO_2	84.14
VOC	3,566.95
CO	110.05
NO_x	104.31

HAPs	Potential to Emit (tons/yr)
Acetaldehyde	238.84
Acrolein	16.96
Formaldehyde	0.73
Methanol	55.36
Single HAP	238.84
Combined HAPs	311.8

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, VOC, NOx, or CO pollutants are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and the potential to emit of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.

(c) Fugitive Emissions
Ethanol processing plant (chemical processing plant) is a process included in one of the twenty-eight (28) listed source categories under 326 IAC 2-2 . Therefore, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based on 8760 hours per year at rated capacity and as otherwise limited):

Pollutant	Potential to Emit (tons/yr)
PM	66.63
PM-10	17.19
SO_2	0.04

VOC	0.40
CO	6.07
NO_x	7.23

(a) This existing source is **not** a major stationary source under 326 IAC 2-2, Prevention of Significant Deterioration (PSD) because no attainment regulated pollutant is emitted at a rate of 100 tons per year or greater, and it is one of the 28 listed source categories.

Potential to Emit After Issuance

The source is currently operating under Minor Source Operating Permit (MSOP 017-20237-00023), issued on June 20, 2005. With the construction of the new ethanol plant the source has been upgraded to a Part 70 source. However the source has opted to be permitted under a FESOP. The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	Potential To Emit (tons/year)						
Process/emission unit	PM	PM-10	SO_2	VOC	CO	NO_x	HAPs
Grain Elevator	1.84	0.37	0.0	0.0	0.0	0.0	0.0
Grain Drying Process	1.06	1.06	0.0	0.0	0.0	0.0	0.0
Grain Dryer Combustion	0.04	0.16	0.01	0.12	1.8	2.15	0.0
Hammermill	14.52	7.26	0.0	0.0	0.0	0.0	0.0
Grain Handling/Transferring (From Existing Elevator to Ethanol Plant	7.41	7.41	0.0	0.0	0.0	0.0	0.0
DDGS Cooling Drum	3.21	3.21	0.0	13.2	0.0	0.0	0.0
DDGS Storage Loadout	4.3	1.45	0.0	0.0	0.0	0.0	0.0
Cooling Tower	16.44	16.44	0.0	0.0	0.0	0.0	Single 0.54 Combined 1.02
Paved Roads (Fug.)	19.1	3.73	0.0	0.0	0.0	0.0	0.0
Valves Flanges (Fug.)	0.0	0.0	0.0	9.74	0.0	0.0	Single 1.5 Combined 1.69
Fermentation	0.27	0.61	0.0	33.0	0.0	0.0	Single HAP 4.59 Combined 6.0
Loading Rack Flare	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Methanator Flare	0.0008	0.0033	0.0003	0.0824	0.63	0.154	0.0
RTOs Combustion & DDGS Dryers	30.33	30.33	81.41	35.7	94.57	94.7	Single 1.92 combined 2.0
Emergency Pump	0.17	0.17	0.15	0.19	0.5	2.23	0.0
Storage Tanks	0.0	0.0	0.0	2.5	0.0	0.0	0.0
Total Emissions	98.69	72.2	81.57	96.13	97.5	99.23	Single worst 8.55 Combined 10.71
PSD Threshold Levels	100	100	100	100	100	100	-

Note: Grain dryer's combustion PTE was based on natural gas fuel usage limit (see detailed emission calculations on Page 7 of 16 TSD App A).

(a) The source is not subject to 326 IAC 2-2, Prevention of Significant Deterioration (PSD), as the source requested a sourcewide limit of less than 100 tons per year for each regulated NSR pollutant; and it is one of the twenty-eight (28) listed source categories (ethanol plants are chemical processing plants).

County Attainment Status

The source is located in Cass County.

Pollutant	Status
PM2.5	Attainment
PM-10	Attainment
SO_2	Attainment
NO_2	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Attainment
CO	Attainment

(a) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Cass County has been designated as attainment for the 8-hour ozone standards. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for 326 IAC 2-2.

(b) Cass County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.

(c) Fugitive Emissions
Ethanol plant is one of the 28 listed source categories under 326 IAC 2-2, therefore, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD applicability.

Federal Rule Applicability

(a) New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60):

(1) 40 CFR 60.300, Subpart DD – Standards of Performance for Grain Elevators

There are no requirements of the New Source Performance Standard, 326 IAC 12 (40 CFR 60.300, Subpart DD), for the following emission units, the truck dump hopper, rail/truck dump hopper, rail car/truck loading site, grain dryer, grain cleaner, grain storage and grain legs, included in this permit because they were constructed in 1974 prior to the August 3, 1978 applicability date.

The hopper bottom truck grain receiving process is subject to the New Source Performance Standard, 326 IAC 12 (40 CFR 60.300, Subpart DD), because it is a truck unloading facility and was constructed after the August 3, 1978 applicability date. The following section of Subpart DD applies to the hopper bottom truck grain receiving process, which has a compliance date on and after the 60th day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup:

40 CFR 60.302(c)(1)
40 CFR 60.303

(2) 40 CFR Part 60.110b, Subpart Kb – Standards of Petroleum for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

This rule applies to storage vessels with a capacity greater than or equal to 40 cubic meters (10,567 gallons).

(A) The proposed vertical fixed roof storage tank, identified as Tank-1 is not subject to this rule, as its capacity of 3,008 gallons is less than 10,567 gallons.

(B) The five external fixed roof tanks, identified as Tank-2 with a capacity of 225,000 gallons, Tank-3 with a capacity of 225,000 gallons, Tank-4 with a capacity of 91,000 gallons, Tank-5 with a capacity of 2,114,000 gallons, and Tank-6 with a capacity of 750,000 gallons, are subject to this NSPS since each tank has a capacity greater than 151 m^3 (39,890 gallons) and each will store VOL with vapor pressure greater than 3.5 kPa (0.51 psi) but less than 76.6 kPa (11.3 psi). The following requirements shall apply to these tanks:

40 CFR § 60.112b
40 CFR § 60.113b
40 CFR § 60.7 and § 60115b

(3) 40 CFR Part 60.480, Subpart VV – Standards of Performance for equipment leaks of VOC in Synthetic Organic Chemicals Manufacturing Industry.

Andersons Clymers is subject to this NSPS, Subpart 60.480 as it produces Ethanol, which is one of the chemicals listed in 40 CFR 60.489. Pursuant to 40 CFR 60.480(a)(2), the affected facilities are the process units, which are defined as components assembled to produce ethanol (as intermediate or final products). Pumps, compressors, pressure relief devices, sampling connection systems, and valves at all process units (see detailed facility description in Section E.2 of the FESOP) are subject to the following requirements:

40 CFR§ 60.482-1 through 40 CFR § 60.482-10 or § 60.480(e)
40 CFR § 60.485
40 CFR § 60.486
40 CFR § 60.487

Pursuant to 40 CFR 60.482-1, the Permittee shall comply with this NSPS within 180 days of initial startup.

(4) 40 CFR Part 60.660, Subpart NNN – Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.

Ethanol is one of the chemicals listed in 40 CFR 60.667 of Subpart NNN, which makes a source subject to this NSPS. However, according to the EPA memo from Mr. George T. Czerniak dated December 6, 2002, the manufacture of ethanol using a fermentation process (biological synthesis) was excluded from the scope of NSPS, Subpart NNN. Therefore, the distillation unit at this new ethanol production plant is not subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels VOC Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (326 IAC 12, 40 CFR 60.660 - 667, Subpart NNN).

(5) 40 CFR Part 60.40b, Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. This rule applies to any steam generating unit that commences construction, modification, or reconstruction

after June 19, 1984, and that has a heat input capacity greater than 100 million Btu/hour.

The two (2) Recuperative Thermal Oxidizers (RTOs)/heat recovery steam generating units, identified as C-10 and C-11, each with a maximum heat input capacity of 122 MMBtu/hr are subject to the New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40b-49b, Subpart Db).

Since the recuperative thermal oxidizers/heat recovery generating units, identified as C-10 and C-11, use natural gas and VOC as fuels, there are no applicable SO2 and PM emission limits for these units in 40 CFR 60, Subpart Db. Pursuant to 40 CFR 60.44b, the NOx emissions from each steam generating unit shall not exceed 0.1 lbs/MMBtu.

Since each recuperative thermal oxidizer/heat recovery generating unit has a maximum heat input capacity less than 250 MMBtu/hr and is using natural gas as fuel, the Permittee shall comply with one of the following monitoring requirements:

(A) Pursuant to 40 CFR 60.48b(b), except for 40 CFR 60.48(b)(g), (h), and (i), the Permittee shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere.

(B) Pursuant to 40 CFR 60.48b(h)(2), the Permittee shall monitor steam generating unit operating conditions and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to 40 CFR 60.49b(c).

These units are also required to comply with the NOx testing requirements in 40 CFR 60.46b and the reporting and recordkeeping requirements in 40 CFR 60.49b.

(b) National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63:

(1) 40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. Andersons Clymers will be limited to less than 10 tons of a single HAP per year and less than 25 tons of combined HAPs per year. Therefore, because the source will be an area source, Subpart ZZZZ will not apply to the 300 horsepower (Hp) diesel emergency generator.

(2) 40 CFR 63, Subpart F, G, and H – National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry. Andersons Clymers will be limited to less than 10 tons of a single HAP per year and less than 25 tons of combined HAPs per year. Therefore, because the source will be an area source, this ethanol production plant is not subject to this NESHAP.

(3) 40 CFR 63, Subpart I – National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks. Andersons Clymers will be limited to less than 10 tons of a single HAP per year and less than 25 tons of combined HAPs per year. Therefore, because the source will be an area source, this ethanol production plant is not subject to the requirements of this NESHAP.

(c) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 20, and 40 CFR Part 61 and 63) included in this permit.

State Rule Applicability – Entire Source

(a) 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-8 (FESOP)
The source, which is one of the twenty-eight (28) listed source categories has a potential to emit before controls greater than 100 tons per year for PM, PM10, VOC, NOx, and CO. A single HAP is emitted at more than 10 tons per year and combined HAPs are emitted at more than 25 tons per year. The source will control emissions through the use of the baghouses, wet scrubber, RTOs, and flares to meet the following limits. Compliance with these limits shall render 326 IAC 2-2 and 326 IAC 2-7 not applicable:

(1) The PM emissions from the following emission units shall be limited as follows:

Emission Unit/Facility	Control	PM Emission Limit (lbs/hr)
Grain Elevator	Baghouse #1	1.8
Grain Drying	Screen Enclosure	0.95
Hammermill and Scalping operation	Baghouse S-30	3.3
Cooling Drum and DDGS Storage/Loadout	Baghouse S-90	1.71
DDGS Dryer	RTOs C-10&C-11	6.9

(2) The PM10 emissions from the following emission units shall be limited as follows:

Emission Unit/Facility	Control	PM10 Emission Limit (lbs/hr)
Grain Elevator	Baghouse #1	1.8
Grain Drying	Screen Enclosure	0.95
Hammermill operation	Baghouse S-30	1.66
Cooling Drum and DDGS Storage/Loadout	Baghouse S-90	1.06
DDGS Dryer	RTOs C-10&C-11	6.9

(3) The NOx emissions from the following emission units shall be limited as follows:

(A) The NOx emissions from the 16.5 million British thermal units per hour (MMBtu/hr) grain dryer shall not exceed 100 pounds per million cubic feet (lb/MMCF) when using natural gas, and its natural gas fuel usage shall be limited to 42,900,000 cubic feet per twelve consecutive month period with compliance determined at the end of each month.

(B) The NOx emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas, and the total natural gas fuel usage shall be limited to 2,137.4 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

(C) The NOx emissions from the four DDGS Dryers shall not exceed 51 pounds per million cubic feet (lb/MMCF) when using natural gas. The total natural gas usage shall be limited to 1,550.5 million cubic feet per twelve consecutive month period with compliance determined at the end of each month.

When using biogas as fuel for the DDGS Dyers every 1.17 cubic feet is equivalent to 1 cubic foot of natural gas.

(D) The NOx emissions from the 300 horsepower (Hp) diesel-fired emergency pump shall be limited to 8.92 pounds per hour and shall be limited to 500 hours of operation per twelve (12) consecutive month period with compliance at the end of each month.

(4) The VOC emissions from the following emission units shall be limited as follows:

(A) The VOC emissions from the DDGS Cooling Drum shall be limited to 3 pounds per hour.

(B) The VOC emissions from the fermentation scrubber shall be limited to 7.5 pounds per hour.

(C) The VOC emissions from the flare for both truck and rail shall not exceed 2.03 lbs/hr. The loading rack shall also be limited to 1600 operating hours per twelve consecutive month period at the maximum loading rates of 600 gpm for trucks and 1200 gpm for railcars.

(D) The VOC emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11), which controls emissions from distillation, evaporation, yeast tanks, and the DDGS Dryers shall not exceed 8.15 pound per hour.

Compliance with these VOC limits shall also limit the HAPs emissions from the entire source to less than 10 tons per year for single HAP and less than 25 tons per year for combined HAPs.

(5) The CO emissions from the following emission units shall be limited as follows:

(A) The CO emissions from the 16.5 million British thermal units per hour (MMBtu/hr) grain dryer shall not exceed 84 pounds per million cubic feet (lb/MMCF) when using natural gas, and its natural gas fuel usage shall be limited to 42,900,000 cubic feet per twelve consecutive month period with compliance determined at the end of each month.

(B) The combined CO emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) and the four DDGS Dryers shall not exceed 21.6 pound per hour.

(6) The SO2 emissions from the four DDGS dryers shall not exceed 0.45 pound per ton of DDGS dried, and shall be limited to a total of 356,880 tons of DDGS dried per twelve consecutive month period with compliance determined at the end of each month. Compliance with this limit shall limit the SO_2 emissions from the entire source to less than 100 tons per year, which renders the requirements of 326 IAC 2-2, PSD and 326 IAC 2-7, Part 70 not applicable.

(c) 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 the permit:

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

(2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60,

Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

(d) 326 IAC 2-6 (Emission Reporting)
This source is located in Cass County and it will operate under a Federally Enforceable State Operating Permit. Therefore, 326 IAC 2-6 does not apply.

State Rule Applicability – Individual Facilities

(a) 326 IAC 8-1-6 (General Reduction Requirements)
This rule applies to new facilities located anywhere in the state as of January 1, 1980, and which have potential VOC emissions of 25 tons per year, and are not otherwise regulated by other provisions of article 326 IAC 8. These sources are required to reduce VOC emissions from these facilities using best available control technology (BACT).

See Appendix B for the detailed BACT analysis for the source.

BACT Conclusion

The BACT determined for these facilities are as follows:

(1) Fermentation Process
(A) The VOC emissions from the fermentation process shall be controlled by wet scrubber S-40.

(B) The VOC emissions from the fermentation process wet scrubber S-40 shall be limited to 7.5 pounds per hour.

(C) The overall VOC control efficiency, which includes capture and absorption efficiencies, for the wet scrubber S-40 shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(2) Dried Distillers Grain and Solubles (DDGS) Dryers
(A) The VOC emissions from the DDGS Dryers shall be controlled by the two (2) Recuperative Thermal Oxidizers (C-10 & C-11).

(B) The VOC emissions from the two Recuperative Thermal Oxidizers (C-10 & C-11) shall not exceed 8.15 pounds per hour.

(C) The overall control efficiency, which includes capture and destruction efficiencies, for each of the two Recuperative Thermal Oxidizers (C-10 & C-11) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(3) Ethanol Loading Rack
(A) The VOC emissions from the ethanol loadout shall be collected and controlled by a flare when loading denatured ethanol.

(B) The overall efficiency for the enclosed flare (including the capture efficiency and destruction efficiency) shall be at least 98%.

(C) The VOC emissions from the flare for both truck and rail shall not exceed 2.03 lbs/hr.

(4) Distillation and Evaporation

(A) The VOC emissions from the distillation and evaporation process shall be controlled by the two RTOs (C-10 and C-11).

(B) The overall control efficiency, which includes capture and destruction efficiencies, for each of the two Recuperative Thermal Oxidizers (C-10 & C-11) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(C) The VOC emissions from the two RTOs (C-10 and C-11) shall not exceed 8.15 lbs/hr.

(b) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
This rule applies to all petroleum liquid storage vessels with capacities greater than one hundred fifty thousand (150,000) liters (thirty-nine thousand (39,000) gallons) containing volatile organic compounds whose true vapor pressure is greater than 10.5 kPa (1.52 psi).

The proposed external floating roof tank, identified as Tank-4, is subject to this rule because its tank capacity is greater than 39,000 gallons and it will store VOL with true vapor pressure greater than 10.5 kPa (1.52 psi).

The following requirements shall be applicable to the external floating roof tank, identified as Tank-4:

(1) The owner or operator shall not store petroleum liquid in Tank-4 unless:

(A) The facility has been fitted with:

(i) A continuous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal); or

(ii) A closure or other device approved by the IDEM, OAQ which is equally effective.

(B) All seal closure devices meet the following requirements:

(i) There are no visible holes, tears, or other openings in the seal(s) or seal fabric;

(ii) The seal(s) are intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall; and

(iii) For vapor mounted primary seals, the accumulated gap area around the circumference of the secondary seal where a gap exceeding one-eighth (1/8) inch exists between the secondary seal and the tank wall shall not exceed 1.0 square inch per foot of tank diameter. There shall be no gaps exceeding one-half (½) inch between the secondary seal and the tank wall of welded tanks and no gaps exceeding one (1) inch between the secondary seal and the tank wall of riveted tanks.

(C) All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, are:

(i) Equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and

(ii) Equipped with projections into the tank which remain below the liquid surface at all times.

(D) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

(E) Rim vents are set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting; and

(F) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least ninety percent (90%) of the area of the opening.

(2) Owners or operators of petroleum liquid storage vessels shall maintain records of the types of volatile petroleum liquid stored, the maximum true vapor pressure of the liquid as stored, and the results of the inspections performed on the storage vessels. Such records shall be maintained for a period of two (2) years and shall be made available to the IDEM, OAQ upon written request.

(c) 326 IAC 8-9-4 (Volatile Organic Liquid Storage Vessels)\
This rule only applies to sources located in Clark, Floyd, Lake or Porter Counties. The source is not located in one of these counties, therefore, the proposed tanks are not subject to this rule.

(d) 326 IAC 9-1-2 (Carbon Monoxide Emission Limits)
The source is not among the listed source categories in 326 IAC 9-1-2. Therefore, the proposed 300 hp emergency pump is not subject to this rule.

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

Process /Facility	Process Weight Rate (tons/hr)	Particulate Emissions (lbs/hr)
Grain Elevator	133.7	54.2
Grain Drying	84	49.5
Hammermills	125.6	53.6
DDGS Cooling Drum	40.7	42.6
DDGS Storage/Loadout	40.7	42.6
DDGS Drying	40.7	42.6

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 is pounds per hour and
P = process weight rate in tons per hour

Baghouses for the grain elevators, grain drying, hammermills, and the DDGS process units shall be operated at all times the units they control are operating in order to comply with this rule.

(f) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1, noncontact cooling tower systems are one of the listed manufacturing processes listed as exempt from this rule.

(g) 326 IAC 6-2-4 (PM Emissions for Sources of Indirect Heating)
Pursuant to 326 IAC 6-2-4(a), indirect heating facilities constructed after September 12, 1983, shall be limited by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

The total heat input capacity of the RTOs/heat recovery steam generators is 244 MMBtu/hr.

$$Pt = \frac{1.09}{244^{0.26}} = 0.26 \text{ lbs/MMBtu.}$$

According to AP-42, Table 1.4-2, the PM emission factor for natural gas fired boilers is 7.6 lbs/MMCF x 1 MMCF/1,000 MMBtu = 0.0076 lbs/MMBtu. Therefore, these units are in compliance with the PM emission limit of 0.26 lbs/MMBtu.

Testing Requirements

In order to demonstrate compliance with the FESOP and PSD minor limits, and to verify the alternative emission factors used in the calculations, the Permittee shall perform the following tests within 60 days after achieving the maximum capacity but not later than 180 days after initial startup of this ethanol production plant:

(a) PM and PM10 tests for the baghouses used to control the particulate emissions from the grain elevator, grain drying, hammermills, DDGS cooling drum, DDGS storage/loadout and DDGS drying operations.

(b) VOC and HAP tests for wet scrubber S-40 which controls the fermentation process.

(c) VOC, CO, SO2, and NOx tests for the RTOs (C-10 & C-11) which control the DDGS dryers, distillation and evaporation.

(d) VOC test for the flare that controls the ethanol loading rack.

Tests shall be repeated every five (5) years.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-8 are 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, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. 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 in 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 approporiate corrective actions within a specific time period.

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

1. Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from stack S-30, S-90, and S-10 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.

2. Recuperative Thermal Oxidizers Parametric Monitoring

(a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with the limits in conditions D.1.4, D.1.5, and D.1.6 as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in the most recent compliant stack test.

3. Recuperative Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTOs (C-10 and C-11) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,450°F.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.1.4 and D.4.5, as approved by IDEM.

(c) On and after the date the approved stack test results are available, the Permittee shall operate the Recuperative thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test.

4. Baghouses Parametric Monitoring

The Permittee shall record the total pressure drop across the baghouses used in conjunction with the hammermills, and DDGS loadout, at least once per day when the process is in operation when venting to the atmosphere. When for any one reading, the

pressure drop across the baghouse is outside the normal range of 2.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances, shall be considered a deviation from this permit.

The instrument used for determining the pressure drop 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.

5. Particulate Control

(a) Except as otherwise provided by this permit, the baghouses for PM control shall be in operation and control emissions at all times the associated emission units 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.

6. Wet Scrubber Parametric Monitoring

The Permittee shall monitor and record the pressure drop and flow rate of scrubber, S-40 at least once per day when the associated fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 4.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the water flow rate of the scrubber is less than the minimum of 35 gallons per minute (gpm), or a minimum 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 mention range or a flow rate that is below the

above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The instruments used for determining the pressure drop and flow rate 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.

8. Scrubber Operation

Except as otherwise provided by statute, or this permit, the scrubber shall be operated as needed to maintain compliance with the VOC emission limits.

9. Flare Pilot Flame
The Permittee shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading rack is in operation and is loading ethanol to trucks and railcars.

Conclusion

The operation of this grain terminal and ethanol production plant shall be subject to the conditions of the **NSR/FESOP 017-21536-00023**.

ATTACHMENT B

CONTROL TECHNOLOGY / BACT ANALYSIS

The Andersons Clymers Ethanol, LLC
Best Available Control Technology (BACT) Analysis

Source Background and Description

Source Name:	The Andersons Clymers Ethanol, LLC
Source Location:	County Roads 300 S and 350 W, Logansport, IN 46947
County:	Cass
SIC Code:	2869
NSR/FESOP:	017-21536-00023

The Andersons Clymers Ethanol, LLC, has performed the following Best Available Control Technology (BACT) review for a new ethanol production plant to be constructed adjacent to the existing grain elevator. Pursuant to 326 IAC 8-1-6, BACT is required for all facilities constructed after January 1, 1980 that have potential VOC emissions of equal to or greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8. Based on emission calculations (see Appendix A) and the analysis of applicable state regulations, the following operations are subject to the requirements of 326 IAC 8-1-6 (BACT):

- Fermentation Process
- DDGS Dryers
- Distillation and Evaporation
- Ethanol Loadout.

The Andersons Clymers Ethanol, LLC conducted these BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft of USEPA's *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis:

(1) Identify all potentially available control options;
(2) Eliminate technically infeasible control options;
(3) Rank remaining control technologies by control effectiveness;
(4) Evaluate the most effective controls and document the results as necessary; and
(5) Select BACT.

In accordance with EPA guidance, the BACT analysis should take into account energy, environmental, and economic impacts. Emission reductions may be achieved through the application of available control techniques, changes in process design, and/or operational limitations.

The following BACT determinations that are in the BACT analysis submitted by The Andersons Clymers Ethanol, LLC, are based on USEPA's RACT/BACT/LAER Clearinghouse (RBLC) and review of state and local air quality permits:

Best Available Control Technology (BACT) Analysis

FERMENTATION

Introduction:

The Andersons Clymers Ethanol, LLC will use a fermentation process to produce ethanol from grain. The potential VOC emissions from this activity are estimated to be greater than 25 tons per year. Therefore, it will be necessary to control the VOC emissions from the fermentation process with BACT, pursuant to 326 IAC 8-1-6.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control VOC emissions from the fermentation process at ethanol production plants:

1. Carbon Adsorption:

   Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Organic vapors retained on the adsorbent are thereafter desorbed and both the adsorbate and absorbent are recovered.

   Carbon adsorption systems operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the absorbate (solvent) is recovered for reuse or disposal. Non-regenerative systems require the removal of the adsorbent and replacement with fresh or previously regenerated carbon.

2. Wet Scrubbers:

   A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent. Other solvents may be used depending on the components of the waste stream.

3. Thermal Oxidation:

   An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer.

   Of all the VOC control technologies evaluated, thermal oxidization is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated or chlorinated solvents) and concentrations, and therefore meet all regulatory standards. In addition to the energy penalty associated with thermal oxidization, NOx emissions will be generated from the combustion of natural gas used to fuel the oxidizer. A thermal oxidizer normally provides a VOC destruction efficiency of at least 98%.

4. Catalytic Oxidation:

In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of VOCs without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 95%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

5. Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream application. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). A flare normally provides a VOC destruction efficiency greater than 98%.

6. Refrigeration Condenser:

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. A refrigeration condenser normally provides a VOC control efficiency greater than 90%.

A review of USEPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana air permits identified the following with respect to fermentation processes:

Plant	RBLC ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Central Indiana Ethanol, LLC	F053-21057-00062	8/4/05 (IN)	Fermentation	Wet scrubber with a control efficiency of 98%. VOC emissions < 6 lbs/hr	Under Construction
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Fermentation	Wet scrubber with a control efficiency of 97%. VOC emissions < 2.44 lbs/hr	Under Construction
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Fermentation	Wet scrubber (packed tower). VOC Emissions < 7.4 lbs/hr	Not Available
Michigan Ethanol	MI-0359	11/04/02 (MI)	Fermentation	BACT determined to be a scrubber with 97% control efficiency and VOC emissions < 6.0 lbs/hr	97.4% (03/19/03)
Grain Processing Corporation	IN-0075	06/10/97 (IN)	Fermentation	Scrubber with 95% control efficiency	Not Available
Cargill, Inc.	NE-0016	04/25/96 (NE)	Fermentation	BACT determined to be a wet scrubber with a VOC emission limit of 11.8 lbs/hr	Not Available

In addition to the RBLC data, The Andersons Clymers Ethanol, LLC provided the following information for the fermentation processes at other ethanol production plants:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Agri-Energy*, MN	22	Wet scrubber and thermal oxidizer	95% removal or 10 ppm	0.58 lbs/hr (01/30/03)
Al-Corn*, MN	34.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.2%; 6.65 lbs/hr (01/21/03)
Central MN Ethanol*, MN	22	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.0%; 2.04 lbs/hr (11/27/02)
Corn Plus, MN	44	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
CVEC, MN	49.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Diversified Energy Co.**, MN	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	2.74 lbs/hr (01/04)
Ethanol 2000**, MN	35	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	98.28%; 5.40 lbs/hr (12/04/02)
Agra Resources Coop. (dba EXOL), MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Pro-Corn, MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	5.11 lbs/hr (04/01/03)
ACE Ethanol*, WI	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	1.07 lbs/hr (11/20/02)
CMEC, MN	22	Wet scrubber	4.3 lbs/hr	98.98%; 2.88 lbs/hr (11/26/02)
MN Energy, MN	19	Wet scrubber	NA	23 lbs/hr (04/07/03)
Gopher State, MN	NA	2 wet scrubbers in series	98% collection efficiency	99.5%; 0.81 lbs/hr (07/09/03)
New Energy Corp., South Bend, IN		Wet scrubber	95% control efficiency	99.5% (10/14/05)

* lbs/hr as ethanol
** lbs/hr as carbon multiplied by the Midwest Scaling Factor of 2.0

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, The Andersons Clymers Ethanol, LLC eliminated carbon adsorption as not technically feasible for fermentation processes. The reasons for eliminating carbon adsorption are as follows:

Carbon adsorption uses intermolecular forces to accumulate organic material at the surface of an adsorbent (typically activated carbon). These intermolecular forces include the small momentary dipoles that result from the movement of electrons within molecular bonds (van der Waals interactions). The incidence of van der Waals interactions increases with larger molecules because there are more bonds within each molecule. For this reason, carbon adsorption is most effective for larger molecules. The VOC compounds emitted from the fermentation system include several small molecules, such as ethanol (MW = 46), acetaldehyde (MW = 44), and formaldehyde (MW = 30). Due to the small size of these molecules, the van der Waals interactions are weak. Since carbon adsorption typically requires a VOC concentration of at least 200 to 1,000 ppmv and average VOC molecular weights of at least 50 to 60 atomic units, this technology is considered infeasible for controlling the VOC emissions from the fermentation system.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Using the control efficiencies reported for similar sources, The Andersons Clymers Ethanol, LLC has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency (%)
Thermal Oxidizer	98%
Catalytic Oxidizer	98%
Flare	98%
Wet Scrubber	98%*
Refrigeration Condenser	90%

* Although previous permits required wet scrubbers to achieve minimum control efficiencies of greater than 95% and in some cases as high as 98%, The Andersons Clymers Ethanol, LLC proposes to install a wet scrubber with a control efficiency expected to achieve equal to or greater than 98%. The Andersons Clymers Ethanol, LLC anticipates that the ICM scrubber, with sodium bisulfite injection capability, based on engineering test data, will achieve such reductions and the proposed VOC emission rate on an overall basis.

Step 4 – Evaluate the Most Effective Controls and Document Results

Based on control efficiencies, the thermal oxidizer, flare, and wet scrubber are the most effective control technologies.

Step 5 – Select BACT

The Andersons Clymers Ethanol, LLC ultimately plans to recover and sell the carbon dioxide from the fermentation process, which can only be achieved using the wet scrubber. Both the thermal oxidizer and flare would destroy the product rather than recovering it. In addition, both the thermal oxidizer and flare generate their own emissions from the combustion process. Since the use of scrubbers has lower environmental impact, generates economic benefit for The Andersons Clymers Ethanol, LLC, and provides the highest ranked control efficiency of 98%, The Andersons Clymers Ethanol, LLC proposes to use a wet scrubber as BACT for the fermentation process. The following requirements represent BACT for the fermentation process at this source:

(a) The VOC emissions from the fermentation process shall be controlled by wet scrubber.

(b) The overall VOC control efficiency for the wet scrubber (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(c) The VOC emissions from the wet scrubber will not exceed 7.5 lbs/hr. This VOC emission limit is based on stack test results from similar sources.

Best Available Control Technology (BACT) Analysis

DISTILLATION AND EVAPORATION

Introduction:

The Andersons Clymers Ethanol, LLC will use distillation to concentrate the ethanol produced in the fermentation process. The potential VOC emissions from this activity are estimated to be greater than 25 tons per year. Therefore, it will be necessary to control the VOC emissions from the distillation and evaporation process with BACT.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control VOC emissions from the distillation and evaporation process at ethanol production plants:

1. Carbon Adsorption:

   Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Organic vapors retained on the adsorbent are thereafter desorbed and both the adsorbate and absorbent are recovered.

   Carbon adsorption systems operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the absorbate (solvent) is recovered for reuse or disposal. Non-regenerative systems require the removal of the adsorbent and replacement with fresh or previously regenerated carbon.

2. Wet Scrubbers:

   A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent. Other solvents may be used depending on the components of the waste stream.

3. Thermal Oxidation:

   An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer.

   Of all the VOC control technologies evaluated, thermal oxidization is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated or chlorinated solvents) and concentrations, and therefore meet all regulatory standards. In addition to the energy penalty associated with thermal oxidization, NOx emissions will be generated from the combustion of natural gas used to fuel the oxidizer. A thermal oxidizer normally provides a VOC destruction efficiency of at least 98%.

4. Catalytic Oxidation:

In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of VOCs without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 95%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

5. Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream application. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). A flare normally provides a VOC destruction efficiency greater than 98%.

6. Refrigeration Condenser:

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. A refrigeration condenser normally provides a VOC control efficiency greater than 90%.

A review of USEPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana air permits identified the following with respect to distillation and evaporation processes:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 lbs/hr	Under Construction
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available
Michigan Ethanol	MI-0359	11/04/02 (MI)	Distillation	Wet scrubber with a control efficiency of 98%. VOC emissions < 0.46 lbs/hr	94.0% (03/19/03)
Grain Processing Corp.	IN-0075	06/10/97 (IN)	Distillation	Wet scrubber with a control efficiency of 95%	Not Available
Cargill, Inc.	NE-0016	04/25/96 (NE)	Distillation	Wet scrubber and a VOC emission limit of 2.22 lbs/hr	Not Available
Central Indiana Ethanol, LLC	F053-21057-00062	8/4/05 (IN)	Distillation and Dehydration	Wet scrubber with a control efficiency of 98%. VOC emissions of 6.0 lbs/hr	Under Construction

In addition to the RBLC data, The Andersons Clymers Ethanol, LLC provided the following information for the distillation and evaporation processes at other ethanol production plants:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Agri-Energy*, MN	22	Wet scrubber and thermal oxidizer	95% removal or 10 ppm	0.58 lbs/hr (01/30/03)
Al-Corn*, MN	34.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.2%; 6.65 lbs/hr (01/03)
Central MN Ethanol*, MN	22	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.0%; 2.04 lbs/hr (11/27/02)
Corn Plus, MN	44	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
CVEC, MN	49.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Diversified Energy Co.**, MN	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	2.74 lbs/hr (01/04)
Ethanol 2000**, MN	35	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	5.40 lbs/hr (12/05/02)
Agra Resources Coop. (dba EXOL), MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Pro-Corn, MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
ACE Ethanol*, WI	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	1.07 lbs/hr (11/20/02)

* lbs/hr as ethanol
** lbs/hr as carbon multiplied by the Midwest Scaling Factor of 2.0

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, The Andersons Clymers Ethanol, LLC eliminated carbon adsorption as not technically feasible for distillation and evaporation processes. The primary VOC constituents emitted from this process are ethanol and acetaldehyde. Carbon adsorption is only technically feasible for VOC concentrations of 200 to 1,000 ppmv and an average VOC molecular weight of 50 to 60 atomic units.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Using the control efficiencies reported for similar sources, The Andersons Clymers Ethanol, LLC has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency (%)
Thermal Oxidizer	98
Catalytic Oxidizer	98
Flare	98
Wet Scrubber	98*
Refrigeration Condenser	90

*Based on the ICM VOC emission reduction guarantee of 98% for thermal oxidation and the widespread use of thermal oxidizers in the ethanol industry with destruction efficiencies greater than 98%, The Andersons Clymers Ethanol, LLC believes that thermal oxidation at 98% is technically feasible for controlling VOC emissions from distillation and evaporation processes.

Step 4 – Evaluate the Most Effective Controls and Document Results

Based on control efficiencies, the thermal oxidizer, flare, and wet scrubber are the most effective control technologies.

Step 5 – Select BACT

Both the thermal oxidizer and flare generate their own emissions from the combustion process. The Andersons Clymers Ethanol, LLC proposes to use recuperative thermal oxidation as the BACT for the distillation and evaporation processes. The following requirements represent BACT for the distillation and evaporation processes at this source:

(a) The VOC emissions from the distillation and evaporation processes will be controlled by the two recuperative thermal oxidizers (C-10 and C-11).

(b) The overall VOC control efficiency for the recuperative thermal oxidizer (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the recuperative thermal oxidizers shall not exceed 8.15 lbs/hr.

Best Available Control Technology (BACT) Analysis

DDGS DRYERS

Introduction:

VOCs will be emitted from the DDGS drying process as trace quantities of alcohol from the fermentation process are evaporated. Other sources of VOC emissions result from the combustion of fuel in the dryer and the partial oxidation of organic material during the drying process. The potential VOC emissions from this activity are estimated to be greater than 25 tons per year. Therefore, it will be necessary to control the VOC emissions from the DDGS dryers with BACT.

Step 1 – Identify Control Options

The following control technologies were identified and evaluated to control VOC emissions from the dryers at ethanol production plants:

1. Carbon Adsorption:

   Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Organic vapors retained on the adsorbent are thereafter desorbed and both the adsorbate and absorbent are recovered.

   Carbon adsorption systems operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the absorbate (solvent) is recovered for reuse or disposal. Non-regenerative systems require the removal of the adsorbent and replacement with fresh or previously regenerated carbon.

2. Wet Scrubbers:

   A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent. Other solvents may be used depending on the components of the waste stream.

3. Thermal Oxidation:

   An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer.

   Of all the VOC control technologies evaluated, thermal oxidization is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated or chlorinated solvents) and concentrations, and therefore meet all regulatory standards. In addition to the energy penalty associated with thermal oxidization, NOx emissions will be generated from the combustion of natural gas used to fuel the oxidizer. A thermal oxidizer normally provides a VOC destruction efficiency of at least 98%.

4. Catalytic Oxidation:

In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of VOCs without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 95%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

5. Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream application. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). A flare normally provides a VOC destruction efficiency greater than 98%.

6. Refrigeration Condenser:

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. A refrigeration condenser normally provides a VOC control efficiency greater than 90%.

A review of USEPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana air permits identified the following with respect to DDGS drying processes:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Central Indiana Ethanol, LLC	F053-21057-00062	8/4/05 (IN)	DDGS/Dryers	Regenerative Thermal Oxidizer with a control efficiency of 98%. VOC emissions < 6 lbs/hr	Under construction
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 lbs/hr	Under Construction
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available
Michigan Ethanol	MI-0359	11/04/02 (MI)	Dryer	RTO with a control efficiency of 95%	99.6% (03/19/03)
Archer Daniels Midland Co.	IL-0087	12/27/02 (IL)	Feed Dryer	RTO with a control efficiency of 95% and VOC < 10 ppm	Not Available
New Energy Corp.	T141-6956-00033	Draft (IN)	DDGS Dryers	RTO with a control efficiency of 95%	98.8% (RTO1) 99.2% (RTO2) (06/30/04)

In addition to the RBLC data, The Andersons Clymers Ethanol, LLC provided the following information for DDGS drying processes at other ethanol production plants:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Ace Ethanol, WI	NA	RTO	96% reduction	NA
Agri-Energy, MN	22	RTO	95% destruction or 10 ppm	99.59% (01/28/03)
Al-Corn, MN	30	TO	95% destruction or 10 ppm	0.11 lbs/hr (08/03/04)
Central MN Ethanol, MN	22	Wet scrubber	95% destruction or 10 ppm	NA
Corn Plus, MN	44	TO or Boiler	95% destruction or 10 ppm	NA
CVEC, MN	49.5	RTO	95% destruction or 10 ppm	NA
Diversified Energy Co., MN	20	RTO	95% destruction or 10 ppm	NA
Ethanol 2000, MN	35	RTO	95% destruction or 10 ppm	97.74 %; 5.94 lbs/hr (10/31/02)
Agra Resources Coop. (dba EXOL), MN	50	RTO	95% destruction or 10 ppm	NA
Pro-Corn, MN	50	RTO	95% destruction or 10 ppm	97.7%; 3.54 lbs/hr (04/01/03)
Gopher State, MN	NA	RTO	95% destruction and 7.7 lbs/hr	1.225 lbs/hr (09/21/01)
EXOL, MN	NA	RTO	NA	0.42 lbs/hr (08/26/03)
DENCO, MN	30	RTO	6.0 lbs/hr	97.3%; 1.93 lbs/hr (01/20/04)

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, The Andersons Clymers Ethanol, LLC eliminated carbon adsorption, catalytic oxidation, flares, and refrigeration condensers as not technically feasible for DDGS drying processes. The reasons for eliminating these control technologies are as follows:

Carbon adsorption typically requires a VOC concentration of at least 200 to 1,000 ppm and an average VOC molecular weight of at least 50 to 60 atomic units. Therefore, carbon adsorption is not an effective control for the DDGS dryers due to the characteristics of the dryer exhaust gases.

Catalytic oxidizers use a catalyst to lower the operating temperature of the oxidation unit. The catalyst must remain effective during operation in order for the control efficiency of the device be maintained. Fouling of the catalyst will rapidly decrease the control efficiency. The catalyst material used for catalytic oxidation has small channels for the waste gas stream to flow. As a result, particulate matter in the dryer exhaust streams is likely to accumulate in the catalyst material, thereby fouling the catalyst and reducing the control efficiency. For this reason, it has been concluded that catalytic oxidation is an unreliable control technology for the dryers because of the presence of particulates in the exhaust gases.

Since flares do not maintain a constant combustion zone temperature, they require supplemental natural gas to enrich the waste gas stream if the VOC concentration is low. In order to increase the heat value of the DDGS dryers, natural gas must be added to the exhaust gases prior to the flare.

Condensers would be technically infeasible because the dryer exhaust characteristics of low VOC concentration and high volumetric flow rate would make them ineffective.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The Andersons Clymers Ethanol, LLC has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency (%)
Thermal Oxidation	98%
Wet Scrubber	Less than 96%*

* A wet scrubber applied to this type of operation will not achieve the level of control that a thermal oxidizer will because of the large flow rate and dilute VOC concentration. Mass transfer in a contact scrubber is driven by concentration. Elevated temperature and particulate matter are also negative properties of this gas stream that make wet scrubbing a less appropriate control technology than the alternatives. The control efficiency is based on a wet scrubber that was applied to a spent grain dryer at an ethanol plant in Luverne, MN.

Step 4 – Evaluate the Most Effective Controls and Document Results

According to the analysis above, the most effective control is a thermal oxidizer with a control efficiency of 98%.

Step 5 – Select BACT

The Andersons Clymers Ethanol, LLC proposes to use recuperative thermal oxidizers with an overall control efficiency of 98% to control the VOC emissions from the DDGS dryers. The following requirements represent BACT for the DDGS drying process at this source:

(a) The VOC emissions from the DDGS dryers will be controlled by the two recuperative thermal oxidizers (C-10 and C-11).

(b) The overall efficiency for the two RTOs (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the two recuperative thermal oxidizers shall not exceed 8.15 lbs/hr.

Best Available Control Technology (BACT) Analysis

ETHANOL LOADOUT

Introduction:

The Andersons Clymers Ethanol, LLC will ship denatured ethanol using either tank trucks or railcars. During loading, VOCs will be emitted as ethanol vapors and gases present in the tanks from previous cargos are displaced by liquid ethanol. The potential VOC emissions from this activity were calculated using the methodology in AP-42, Section 5.2, Transportation and Loading of Petroleum Liquids (1/95). The potential VOC emissions from this ethanol loading operation (trucks and railcars loading) are estimated to be greater than 25 tons per year. Therefore, it will be necessary to control the VOC emissions from the ethanol loadout with BACT.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the ethanol loadout:

1. Carbon Adsorption:

   Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Organic vapors retained on the adsorbent are thereafter desorbed and both the adsorbate and absorbent are recovered.

   Carbon adsorption systems operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the absorbate (solvent) is recovered for reuse or disposal. Non-regenerative systems require the removal of the adsorbent and replacement with fresh or previously regenerated carbon.

2. Wet Scrubbers:

   A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent. Other solvents may be used depending on the components of the waste stream.

3. Thermal Oxidation:

   An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer.

   Of all the VOC control technologies evaluated, thermal oxidization is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated or chlorinated solvents) and concentrations, and therefore meet all regulatory standards. In addition to the energy penalty associated with thermal oxidization, NOx emissions will be generated from the combustion of natural gas used to fuel the oxidizer. A thermal oxidizer normally provides a VOC destruction efficiency of at least 98%.

4. Catalytic Oxidation:

In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of VOCs without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 95%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

5. Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream application. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). A flare normally provides a VOC destruction efficiency greater than 98%.

6. Refrigeration Condenser:

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. A refrigeration condenser normally provides a VOC control efficiency greater than 90%.

A review of USEPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana air permits identified the following with respect to DDGS drying processes:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Central Indiana Ethanol, LLC	F053-21057-00062	8/4/05 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%	Under construction
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%	Under construction
Motiva Enterprises, L.L.C.	CT-0149	10/22/03 (CT)	Fuel Loading Rack	Vapor recovery unit with carbon absorption unit	Not Available
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Ethanol Loading Rack	Flare with a control efficiency of 94%	Not Available
Archer Daniels Midland Co.	IL-0090	03/28/03 (IL)	Ethanol Loading Rack	Flare with a control efficiency of 95%	Not Available
Van Waters & Rogers	CA-0894	09/01/99 (CA)	Truck Loading Stations	Thermal oxidizer with a control efficiency of 95%	Not Available

In addition to the RBLC data, The Andersons Clymers Ethanol, LLC provided the following information for ethanol loadout processes at other ethanol production plants:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits
Agri-Energy, MN	22	DDGS Dryer/TO	Truck: 95% Destruction or 10ppm of VOC emissions from the thermal oxidizer. Railcar: dedicated ethanol vessels only
Al-Corn, MN	30	DDGS Dryer/TO	Truck: 95% Destruction or 10ppm of VOC emissions from the thermal oxidizer. Railcar: dedicated ethanol vessels only
Central MN Ethanol, MN	22	DDGS Dryer	Truck: Route to dryer control equipment Railcar: dedicated ethanol vessels only
Corn Plus, MN	44	Boiler/TO	95% destruction or 10 ppm limit for boiler
CVEC, MN	49.5	DDGS Dryer/TO	Truck: Route to dryer control equipment (95% reduction or 10 ppm) Railcar: Dedicated ethanol vessels only
Diversified Energy Co., MN	20	Flare	95% destruction
Ethanol 2000, MN	35	Flare	95% destruction
Agra Resources Coop. (dba EXOL), MN	50	DDGS Dryer/TO	Truck: 95% destruction or 10 ppm limit for VOC emissions from the thermal oxidizer
Pro-Corn, MN	50	Flare	95% destruction

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, The Andersons Clymers Ethanol, LLC eliminated carbon adsorption and wet scrubbers as not technically feasible for ethanol loadout processes. The reasons for eliminating these technologies are as follows:

Carbon adsorption is effective when there is sufficient VOC concentration and adequate van der Waals interactions. Because the primary VOC being emitted is ethanol, the van der Waals interactions would be minimal. Therefore, carbon adsorption is not typically used in this type of application. According to Calgon Carbon Industries, carbon adsorption is actually used in some applications to purify ethanol. This means that carbon adsorption is so ineffective at capturing ethanol that it is used to remove contaminants from ethanol. Therefore, carbon adsorption is considered technologically infeasible for controlling the VOC emissions from the ethanol loadout facility.

Wet scrubbers are reasonably effective for controlling VOC emissions when the VOCs are easily absorbed in water. Several characteristics control the effectiveness of wet scrubbers for VOC removal. The one parameter that can be easily analyzed to determine if wet scrubbing is effective is the solubility of the pollutants in the absorbent (water). The constituents in gasoline include many different organic compounds. Some of these compounds have limited solubility in water and, therefore, potentially affect the control efficiency of the scrubber. A significant amount of VOC emissions emitted during loadout arises from the displacement of petroleum or gasoline vapors present in the tank from the previous cargo. While the emissions from the ethanol would be effectively controlled by a wet scrubber, the VOC emissions resulting from the displacement of gasoline or petroleum vapors would not be effectively controlled by a wet scrubber.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

A condenser, thermal oxidizer, and flare are the only technically feasible control options for the ethanol loadout. The Andersons Clymers Ethanol, LLC has ranked these control technologies as follows:

Control Technology	VOC Control Efficiency (%)
Flare	98
Thermal Oxidizer	98
Refrigeration Condenser	Greater than 90

Step 4 – Evaluate the Most Effective Controls and Document Results

The two most effective control technologies are thermal oxidizers and flares.

Step 5 – Select BACT

Since flares achieve the highest control efficiency and have been used to control VOC emissions from other ethanol loading racks, The Andersons Clymers Ethanol, LLC proposes to use a flare with a destruction efficiency of 98% to control the VOC emissions from the ethanol loadout. The following requirements represent BACT for the ethanol loadout process at this source:

(a) The VOC emissions from the ethanol loadout shall be collected and controlled by a flare when loading denatured ethanol.

(b) The overall efficiency for the enclosed flare (including the capture efficiency and destruction efficiency) shall be at least 98%.

(c) The VOC emissions from the flare for both truck and rail shall not exceed 2.03 lbs/hr.

SUMMARY OF EMISSIONS

Company Name: The Andersons Clymers Ethanol, LLC
Address: County Roads 300S and 350 W, Logansport, IN 46947
Permit: 017-21536-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

GRAIN TERMINAL | ETHANOL PLANT

UNCONTROLLED EMISSIONS (TONS/YR)

Pollutant	Grain Elevator	Grain Drying	Grain Dryer Combustion	Hammermill	Grain Handling fr. Existing Elevator	DDGS Cooling Drum	DDGS Storage/Loadout	Cooling Tower	Paved Roads (Fug.)	Valves Flanges (Fug.)	Fermentation	Loading Rack	Methanator Flare	RTOs Combustion	Distillation/Evaporation DDGS Drying, and Combustion	Emergency Pump	Storage Tanks	Insignificant Process Tanks	TOTAL PTE
PM	58.73	16.02	0.55	96.17	34.47	3.21	15.35	16.44	19.1		14		0.0008	356.9	RTO, Distillation/Evap., and dryer	2.89			633.83
PM10	25.09	4	0.55	48.09	19.21	3.21	5.17	16.44	3.73		31		0.0033	356.9	RTO, Distillation/Evap., and dryer	2.89			516.28
VOC			0.4			13.2				56.27	1650	67.6	0.0824	1784.8	RTO, Distillation/Evap., and dryer	3.3	2.5	0.649	3578.80
NOx			7.23									1.91	0.154	54.5	40.2	40.73			144.72
SO2			0.04										0.0003	1.11	80.3	2.69			84.14
CO			6.07									10.37	0.63	94.57	RTO, Distillation/Evap., and dryer	8.78			120.42
Single HAP								0.54		8.7	229.6				99.93				338.77
Combined HAPs								1.02		9.87	301				186.03				497.92

CONTROLLED/LIMITED EMISSIONS (TONS/YR)

PM	1.27	1.06	0.16	14.52	3.45	3.21	4.3	16.44	19.1		0.27		0.0008	30.33	RTO, Distillation/Evap., and dryer	0.17			94.28
PM10	0.44	1.06	0.16	7.26	1.92	3.21	1.45	16.44	3.73		0.61		0.0033	30.33	RTO, Distillation/Evap., and dryer	0.17			66.78
VOC			0.12			13.2				9.74	33.00	2.28	0.0824	35.7	RTO, Distillation/Evap., and dryer	0.19	2.5	0.649	97.46
NOx			2.15									0.37	0.154	54.5	40.2	2.23			99.60
SO2			0.01										0.0003	1.11	80.3	0.15			81.57
CO			1.8									2.00	0.63	94.57	RTO, Distillation/Evap., and dryer	0.5			99.50
Single HAP								0.54		1.5	4.59				2.00				8.63
Combined HAPs								1.02		1.69	6.00				3.74				12.45

Note: Grain Elevator includes fugitive emissions. Fugitive emissions is added towards PSD applicability since the source is 1 of the 28 listed source categories

Hammermill emissions include the scalping emissions + fugitives from scalping on page 5 of 15.

Existing Elevator PTE Calculations
(assumed 56 lb corn/bushel, 60 lb beans/bushel

RECEIVING (baghouse controls 2 pits, 1 pit for straight truck is uncontrolled)

STRAIGHT TRUCK	2,000,000	BUSHELS	(assume corn at 56 lb/bushel)
(controlled pit)	112000000	POUNDS	
	56000	TONS/YR	
	56000	TONS/YR x 0.059 # PM10/TON	0.18 # PM/TON
	1.65	TONS PM10/YR (UNCONTROLLED)	
	5.04	TONS PM/YR (UNCONTROLLED)	
	3304	POUNDS PM10 x 0.011 CONTROL FACTOR	
	36.34	POUNDS PM/10PM	
	0.02	TONS PM/PM10 (CONTROLLED)	
HOPPER TRUCK	37,285,716	BUSHELS	(assume corn at 56 lb/bushel)
and/or RAILCAR	2.088E+09	POUNDS	
(controlled pit)	1044000	TONS/YR	
	1044000	TONS/YR x 0.0078 # PM10/TON	0.035 # PM/TON
	4.07	TONS PM10/YR (UNCONTROLLED)	
	18.27	TONS PM/YR (UNCONTROLLED)	
	8143.20	POUNDS PM10 x 0.011 CONTROL FACTOR	
	89.58	POUNDS PM10	
	0.04	TONS PM/PM10/YR (C0NTROLLED)	
Hopper Truck	1,000,000	BUSHELS	(assume beans at 60 lb/bushel)
(uncontrolled pit)	60,000,000	POUNDS	
	30000	TONS	
	30000	TONS x 0.0078 # PM10/TON	0.035 # PM/TON
	0.12	TONS PM10/YR (UNCONTROLLED)	
	0.53	TONS PM/YR (UNCONTROLLED)	

SHIPPING

TRUCK	100,000	BUSHELS	(assume beans at 60 lb/bushel)
	6000000	POUNDS	
	3000	TONS	
	3000	TONS x 0.029 # PM10/TON	0.086 # PM/TON
	0.04	TONS PM10/YR (UNCONTROLLED)	
	0.13	TONS/PM/YR (UNCONTROLLED)	
RAIL	900,000	BUSHELS	(assume beans at 60 lb/bushel)
	54000000	POUNDS	
	27000	TONS	
	27000	TONS x 0.0022 # PM10/TON	0.027 # PM/TON
	0.03	TONS PM10/YR (UNCONTROLLED)	
	0.36	TONS PM/YR (UNCONTROLLED)	
INTERNAL HANDLING	40,285,716	BUSHELS	(assume 56 lb/bushel)
	2.256E+09	POUNDS	
	1128000	TONS	
	1128000	TONS x 0.034 # PM10/TON	0.061 # PM/TON
	19.18	TONS PM10/YR (UNCONTROLLED)	
	34.40	TONS PM/YR (UNCONTROLLED)	
	38352.00	POUNDS PM10 x 0.01 CONTROL FACTOR	
	383.52	POUNDS PM10	
	0.19	TONS PM/PM10/YR	
GRAND TOTAL (Handling Emissions)	**25.09**	TONS PM10/YR (UNCONTROLLED)	
	58.73	TONS PM/YR (UNCONTROLLED)	
	0.44	TONS PM10/YR (CONTROLLED)	
	1.27	TONS PM/YR (CONTROLLED)	
DRYING (Process Emissions)	5,200,000	BUSHELS	(assume 56 lb/bushel)
(Column Dryer)	291200000	POUNDS	
at 2000 bushels/hr rate	145600	TONS	
	145600	TONS x 0.055 # PM10/TON	0.22 #PM/TON
	4.00	TONS PM10/YR (UNCONTROLLED)	
	16.02	TONS PM/YR (UNCONTROLLED)	
	8008.00	POUNDS PM10 x 0.265 CONTROL FACTOR	
	2122.12	POUNDS PM10	
	1.06	TONS PM/PM10/YR	

NOTES: AP-42 Emission Factors were used to make calculations
Control factors were provided by the manufacturer

Appendix A: Emissions Calculations
Natural Gas Combustion Only
Grain Terminal Grain Dryer

Company Name: The Andersons Clymers Ethanol, LLC
Address City IN Zip: County Roads 300S and 350 W, Logansport, Indiana 46947
Permit Number: 017-21536-00023
Plt ID: 017-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
16.5	144.5
Grain Dryer	

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.55	0.55	0.04	7.23	0.40	6.07

PM/PM10 emission factor is filterable and condensable combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
(located at the grain terminal plant)

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
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 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
Grain Terminal Grain Dryer

Company Name: The Andersons Clymers Ethanol, LLC
Address City IN Zip: County Roads 300S and 350 W, Logansport, Indiana 46947
Permit Number: 017-21536-00023
Plt ID: 017-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
16.5	**42.9**
Grain Dryer	**Natural Gas Usage Limit**

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.16	0.16	0.01	2.15	0.12	1.80

PM/PM10 emission factor is filterable and condensable combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
(located at the grain terminal plant)

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
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 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Company Name: The Andersons Clymers Ethanol, LLC
Adress City IN Zip: County Roads 300S and 350W, Logansport, Indiana 46947
Permit Number: 017-21536
Plt ID: 017-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

Ethanol Plant Various Handling Processes

Emission Point Description	Processing Rate ton/year	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	Emission Factor Source	Emission Control System Type	Capture Efficiency %	Control Efficiency %	PM Uncontrolled Emissions (tons/yr)	PM10 Uncontrolled Emissions (tons/yr)	PM Controlled Emissions (tons/yr)	PM10 Controlled Emissions (tons/yr)
Grain Handling to Ethanol Day Bin	1,130,000	0.061	0.034	AP-42	baghouse	100.0%	90%	34.47	19.21	3.45	1.92
Grain Scalping/Separator	1,100,000	0.012	0.006	AP-42	S30	80%	90%	23.57	11.79	6.60	3.30
Fugitive Grain Scalping/Separator	1,100,000	0.012	0.006	AP-42		no control	no control	6.60	3.30	1.32	0.66
Hammermilling	1,100,000	0.012	0.006	AP-42	S30	100%	90%	66.00	33.00	6.60	3.30
DDGS Cooling Drum	356,880	0.018	0.18		S70	100%		3.21	3.21	3.21	3.21
DDGS Storage/Loadout	356,880	0.086	0.029		S90	80%	90%	15.35	5.17	4.30	1.45
						TOTAL		**149.2**	**75.68**	**25.48**	**13.84**

Company Name: The Andersons Clymers Ethanol, LLC
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Permit Number: 017-21536
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Date: July 28, 2005

DRIED DISTILLER GRAINS (DDGS) COOLING DRUM EMISSIONS				
OPERATION	POLLUTANT	THROUGPUT DDGS (tons/yr)	EMISSION FACTOR (lb/ton)	UNCONTROLLED EMISSIONS (tons/yr)
DDGS Cooling Drum				
	VOC	356,880	0.074	13.20
	Acetylaldehyde	356,880	0.003	0.54
	Acrolein	356,880	0.0013	0.23
	Methanol	356,880	0.0007	0.12
	Formaldehyde	356,880	0.0007	0.12
	Total HAPs			**1.02**

COOLING TOWER EMISSIONS						
OPERATION	CIRCULATION RATE (gal/hr)	TDS CONTENT (avg ppm)	DRIFT LOSS %	PM EMISSIONS (tons/yr)	PM10 EMISSIONS (tons/yr)	VOC EMISSIONS (tons/yr)
Cooling Tower (4 cells)	3,000,000	3,000	0.005%	16.44	16.44	0

Mass balance based on circulation rates, total dissolve solids (TDS), Drift Loss
Water density - 8.34 lb/gal
Based on manufacturer's guarantee of 0.005% drift loss
Assume PM = PM10
Any increase in the TDS beyond 3000 ppm will result in increase PM/PM10 emissions.
VOC estimates based on addition of typical biocides, 5% by volume by weight
Biocide to be used does not contain VOC.

PM/PM10 = circulation rate, gal/hr *TDS, ppm *drift loss * 8760 hrs/yr * ton/2000 lb *density of water *1/1000000 ppm

Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads

Company Name: The Andersons Clymers Ethanol, LLC
Address: County Roads 300S and 350W, Logansport, IN 46947
Permit: 017-21536-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E =	emission factor (lb/vehicle mile traveled)	
sL =	road surface silt loading (g/m^2) =	0.6 (g/m^2) (AP-42, Table 13.2.1-3)
w =	mean vehicle weight (tons) =	28.4 tons
k =	empirical constant =	0.082 for PM and 0.016 for PM10
a =	empirical constant =	0.65
b =	empirical constant =	1.5
C =	emission factor for exhaust, brake and tire wear	0.00047 for PM and PM10
p =	number of days per year with 0.01 inches precipitatio	120

PM Emission Factor = $(0.082 \times (0.6/2)^{0.65} \times (20.6/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **1.00** lbs/mile

PM10 Emission Factor = $(0.016 \times (0.6/2)^{0.65} \times (20.6/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.19** lbs/mile

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	*Ave Weight of Vehicles (tons)	*Trip Number (trips/day)	* Round Trip Distance (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)
Denaturant	40	733	0.84	587	1.1%	0.4	0.3	0.06
Ethanol Load Out	40	733	0.84	587	1.1%	0.43	0.29	0.06
Grain	40	46,400	0.84	37,120	68.7%	27.50	18.56	3.62
DDGS	40	14,275		15,703				
Wet DGS	40	0	0.84	0	0.00%	0.00	0.00	0.00
Total				**53,997**	**71%**	**28.4**	**19.1**	**3.73**

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/hr) x Round-Trip Distance (mile/trip) x 8760 hrs/y
Traffic Component (%) = VMT / Total VMT
Component Vehicle Weight = Ave. Weight of Vehicles (ton) x Traffic Component (%)
PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

	Company Name:	The Andersons Clymers Ethanol, LLC				
	Address:	County Roads 300S and 350W, Logansport, IN 46947				
	Permit:	017-21536-00023				
	Reviewer:	Aida De Guzman				
	Date:	July 28, 2005				
Valves, and Flanges Fugitive Emissions						
Equipment	# of Components	Leak Rate	Uncontrolled VOC	LDAR % Control	Controlled VOC	
		(kg/hr/component)	Emissions (ton/yr)		Emissions (tons/yr)	
Light Liquid Valves	600	0.00403	23.30	84%	3.73	
Light Liquid Pumps	50	0.0199	9.59	69%	2.97	
Gas Valves	100	0.00597	5.75	87%	0.75	
Flanges (connectors)	1000	0.00183	17.63	87%	2.29	
TOTAL	1750		56.27		9.74	
HAP Portion of the VOC						
HAP	Mass Fraction	Uncontrolled HAP	Controlled HAP			
		(tons/yr)	(tons/yr)			
Formaldehyde	0.000169	0.010	0.002			
Acetaldehyde	0.155	8.723	1.510			
Methanol	0.015	0.844	0.146			
Acrolein	0.0045	0.253	0.044			
Uncontrolled VOC = # components * Leak rate, kg/hr/unit * 2.2 lb/kg * 8760 hrs/yr * ton/2000 lb						
Controlled VOC = Uncontrolled VOC * (1-LDAR Control)						
Uncontrolled HAP = total uncontrolled VOC * Mass fraction						
Basis: Leak rate (SOCMI average) multiplied by no. of components based on a similar size facility.						
Leak Rates and VOC control were taken from the Protocol for Leak Emission Rates EPA- 453/R-95-017, Nov. 1995						

Appendix A: Emission Calculations
VOC and HAP Emissions

Company Name: The Andersons Clymers Ethanol, LLC
Address: County Road 300S and 350 W, Logansport, IN 46947
Permit: 017-21536-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

Fermentation Process

1. Process Description:

Max. Throughput Rate: 110 MMgal/yr of ethanol
Control Equipment: Wet Scrubber with 98% efficiency.

2. Potential to Emit (PTE) of VOC and HAP:

Pollutant	Emission Factor (lb/MMgal)	PTE after Control (tons/yr)	**Control Efficiency (%)	PTE before Control (tons/yr)
VOC	600.00	33.0	98%	1,650
PM	4.96	0.27	98%	14
PM10	11.10	0.61	98%	31
HAP				
Acetaldehyde	83.5	4.59	98%	229.6
Acrolein	5.88	0.32	98%	16.17
Formaldehyde	0.22	0.01	98%	0.60
Methanol	19.85	1.09	98%	54.59
Total HAP	**109.45**	**6.0**		**301.0**

Emission factors were extrapolated from ICM -Russell Ethanol plant stack test data.

Methodology

PTE after Control (tons/yr) = Throughput rate, MMgal/yr x Ef lb/MMgal * 1 ton/2000 lbs
PTE before Control (tons/yr) = PTE after Control (tons/yr) / (1- Control Efficiency)

Appendix A: Emission Calculations
VOC and HAP Emissions

Company Name: The Andersons Clymers Ethanol, LLC
Address: County Roads 300S and 350 W, Logansport, IN 46947
Permit: 017-21536-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

Loading Racks Emissions (FLARE, CE012)

1. Emission Factors: AP-42

Ethanol will be shipped by truck and by rail. Railcars will be dedicated fleets, but the trucks may be used to carry gasoline prior to filling with ethanol. Railcars and trucks will be filled by submerged loading process, both loading racks (truck and rails) will be controlled by flare CE012, which has a control efficiency of 98% for VOC and HAPs.

According to AP-42, Chapter 5.2 - Transportation and Marketing of Petroleum Liquids (01/95), the VOC emission factors for the truck and rail loading rack can be estimated from the following equation

$$L = 12.46 \times (SPM)/T$$

where:

L = loading loss (lbs/kgal)
S = a saturation factor (see AP-42, Table 5.2-1)
P = true vapor pressure of the liquid loaded (psia)
M = molecular weight of vapors
T = temperature of the bulk liquid loaded (degree R)

Previous Stored Liquid	*S	P (psia)	M (lbs/mole lbs)	T (degree R)	L (lbs/kgal)
Gasoline (normal)	0.6	4.389	66	505	4.29
Gasoline (clean cargo)	0.5	4.389	66	505	3.57
Denatured Ethanol (normal)	0.6	0.589	49.7	505	0.43
Denatured Ethanol (clean cargo)	0.5	0.589	49.7	505	0.36

Therefore, the emission factor for loading denatured ethanol to the trucks which stored gasoline previously
= L (gasoline, normal) - L (gasoline, clean cargo) + L (denatured ethanol, clean cargo) = 1.08 (lbs/kgal)

2. Potential to Emit VOC Before and After Control:

Railcar Max. Loading Rate = 110,000,000 kgal/yr

Rail Loading Emissions:
VOC Emissions Before Control = 110,000 kgal/yr x 1.08 lbs/kgal x 1 ton/2000 lbs = **59 tons/yr**
'VOC Emissions After Control = **1.18** tons/yr Flare at 98% efficiency)

Truck Loading Emissions Before Control = 110,000 kgal/yr x 4.23 lb/kgal x 1 ton/2000 lb = **235 tons/yr** (worst case)
Truck Loading Emissions After Control = **4.70** tons/yr **2.00** tons/yr limit @ 1690 hrs/yr (both rail and truck)
Combustion VOC Emissions = 0.2' **0.33** tons/yr **0.28** tons/yr limit @ 1690 hrs/yr
TOTAL Controlled VOC Emissions = **6.21** tons/yr **2.28** tons/yr limit @ 1690 hrs/yr

Combustion Emissions: (Using Waste gas Emission factors, AP-42, Table 13.5-1 VOC = 0.052 lb/MMBtu, CO = 0.37 lb/MMBtu)
NOx = 0.068 lb/MMBtu, PM/PM10 = negligible (smokeless design), SO2 = negligible

Flaring Emissions: 6.4 MMBtu/hr heat input

	Emissions @ 8760 hrs/yr		Emissions @ 1690 hr/yr	
VOC Emissions =	1.46	tons/yr	0.28	tons/yr
NOx Emissions =	1.91	tons/yr	0.37	tons/yr
CO Emissions =	10.37	tons/yr	2.00	tons/yr

Pilot Emissions: (Using Emission factors, AP-42, Table 1.4 VOC = 0.0055 lb/MMBtu, CO = 0.084 lb/MMBtu
NOx = 0.1 lb/MMBtu, PM/PM10 = 0.0076 lb/MMBtu, SO2 =0.0006 lb/MMBtu

Pilot Emissions: 0.1 MMBtu/hr heat input

VOC Emissions =	0.00	tons/yr
NOx Emissions =	0.04	tons/yr
CO Emissions =	0.04	tons/yr
PM/PM10 Emissions =	0.00	tons/yr
SO2 Emissions =	0.00	tons/yr

Appendix A: Emissions Calculations

Biomethanator Flare

Company Name:	The Andersons Clymers Ethanol, LLC
Address City IN Zip:	County Roads 300S and 350W, Logansport, IN 46947
Permit Number:	017-21536
Plt ID:	017-00023
Reviewer:	Aida De Guzman
Date:	July 28, 2005

Heat Input Capacity MMBtu/hr

6.4

Flaring Emissions

	Pollutant		
	VOC	CO	NOx
Emission Factor in lb/MMBtu	0.052	0.370	0.068
Potential Emission in tons/yr	0.08	0.59	0.11

0.1 mmBtu/hr

Pilot Emissions

	Pollutant					
	PM*	PM10*	SO2	CO	NOx	VOC
Emission Factor in lb/MMCF	1.9	7.6	0.6	84	100	5.5
Potential Emission in tons/yr	0.0008	0.0033	0.0003	0.0368	0.0438	0.0024

Note: VOC Ef from flaring is 0.14 lb/MMBtu measured as methane equivalent (Table 13.5-1). Methane and Ethane is subtracted from the total VOC = 0.14 * 55% methane (% from Table 13.5-2) + 8% ethane = 0.052 lb/MMBtu

The flare only operates or control emissions from the biomethanator when the dryer is down, which is at 500 hrs/yr (worst case)

Otherwise, biomethanator off gases go to the dryer for combustion.

Flare - soot in concentration value of 0 mg/liter (nonsmoking flare)

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Fee

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3 (SUPPLEMENT D 3/98)

Emissions, tons/yr = heat input, MMBtu/hr * 8760 hrs/yr * MMCF/1000 MMBtu

* Ef, lb/MMCF / 2000 lbs/ton

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Plt ID:	017-00023
Reviewer:	Aida De Guzman
Date:	July 28, 2005

Heat Input Capacity MMBtu/hr	
180.0	

DDGS DRYERS BIOGAS AND NATURAL GAS COMBUSTION EMISSIONS

Throughput MMCF/yr	1576.8

	SO2	NOx
Emission Factor in lb/MMCF	0.6	51.0
		**see below
Potential Emission in tons/yr	0.5	40.2

**NOx Emission Factor came from the manufacturer which is lower than the AP-42.

Note: The 180 MMBtu/hr heat input rate includes 3.0 MMBtu/hr heat input from the biogas, which supplements natural gas.

This emission factor will be verified through stack test.

Maximum Biogas supplement = 3 MMBtu/hr * 1 CF/850 Btu * 8760 hrs/yr = 30,917,647 CF/yr

Fuel Equivalency = 1 CF biogas/850 Btu * 1,000 Btu/CF = 1.17 CF of biogas/CF N.G.

180 MMBtu/hr - 3 MMBtu/hr = 177 MMBtu/hr

Natural Gas Limit = 177 MMBtu/hr * 8760 hrs/yr * 1 MMCF/1000 MMBtu = 1,550.5 MMCF/yr

Methodology

All emission factors are based on normal fi

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04

(AP-42 Supplement D 3/98)

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

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Date: July 28, 2005

EMISSIONS FROM DISTILLATION/EVAPORATION
DDGS DRYERS & 2 RTOS (180 mmBtu/hr & 244 MMBtu/hr)

RTOs	244	MMBtu/hr
Maximum Capacity, tons/yr =	356,880	DDGS Dried

	Uncontrolled			Controlled		
	PM/PM10	CO	VOC	PM/PM10	CO	VOC
Emission Factor in lb/ton	2.00E+00	5.3E-01	1.0E+01	0.17	0.53	0.2
Potential Emission in tons/yr	356.88	94.57	1784.40	30.33	94.57	35.69

	SO2	SO2 (combustion)	Total SO2 Emissions	NOx
Emission Factor	0.45 lb/ton	0.6lb/MMCF		51 lbs/MMCF
Emissions from combustion and DDGS drying process with the use of Sulfuric Acid to control PH in the process	80.30	1.11	81.41	54.50

DDGS DRYING

UNCONTROLLED				CONTROLLED			
Acetaldehyde 0.56 lb/ton	Formaldehyde 0.31 lb/ton	Acrolein 0.066 lb/ton	Methanol 0.11 lb/ton	Acetaldehyde 0.56 lb/ton	Formaldehyde 0.31 lb/ton	Acrolein 0.066 lb/ton	Methanol 0.11 lb/ton
99.93	55.32	11.78	19.63	2.00	1.11	0.24	0.39

Thermal oxidizer controlling PM/PM10 at 91% efficiency, CO at 93% efficiency, and VOC at 98% efficiency.
Emission Factors were based on stack testing results from similar sources. These emission factors will be verified through stack testing.

Methodology:
Uncontrolled /Controlled PTE, tons/yr = DDGS dried, tons/yr * Ef, lb/ton * ton/2000 lbs

Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Turbine (>250 and <600 HP)
Reciprocating

Company Name: The Andersons Clymers Ethanol, LLC
Address City IN Zip: County Roads 300S and 350W, Logansport, IN 46947
Permit Number: 017-21536
Plt ID: 017-00023
Reviewer: Aida De Guzman
Date: July 28, 2005

Heat Input Capacity Horsepower (hp)	Potential Throughput hp-hr/yr	
300.0	150000.0	2628000.0

Emergency pump

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr @ 8760 hrs/yr	2.89	2.89	2.69	40.73	3.30	8.78
Potential Emission in tons/yr	0.17	0.17	0.15	2.33	0.19	0.50

EF from the manufacturer will not be used in the calculation in order that no verification through stack test will be made, since PTE is insignificant.

Methodology

Potential Througput (hp-hr/yr) = hp * 500 hr/yr

Use a conversion factor of 7,000 Btu per hp-hr to convert from horsepower to Btu/hr, unless the source gives you a source-specific brake-specific fuel consumption. (AP-42, Footnote a, Table 3.3-1)

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2
Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)
Emission (tons/yr) = [Potential Throughput (hp-hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton)

*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

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Adress City IN Zip: County Roads 300S and 350W, Logansport, Indiana 46947
Permit Number: 017-21536
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Date: July 28, 2005

Insignificant Process Tanks

Emission Point	VOC Concentration (ppm)	Molecular Weight Factor	Flow Rate (cfm)	Conversion Constant -1.56E-07	Midwest Scaling Factor	VOC Emissions (lb/hr)	VOC Emissions (tons/yr)
Thin Stillage Tank Vent	44.00	59.2	8	1.55E-07	2.3	7.50E-03	0.033
Syrup Tank Vent	62.20	59.2	5.4	1.55E-07	2.3	7.10E-03	0.031
Cook Water Tank Vent	31.00	59.2	13.4	1.55E-07	2.3	8.80E-03	0.039
Liquifaction Tank #1	64.70	59.2	80	1.55E-07	2.3	1.10E-01	0.481
Whole Stillage	7.00	59.2	100	1.55E-07	2.3	1.48E-02	0.065
TOTAL EMISSIONS						**1.48E-01**	**0.649**