INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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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 26, 2007

RE: Ceres Holdings, LLC / 007-23773-00018

FROM: Nisha Sizemore
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 03/23/06

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

Ceres Holdings, LLC
2800 W 300 N
Fowler, Indiana 47944

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

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

Operation Permit No.: F007-23773-00018	
Issued by: Original signed by Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date:February 26, 2007 Expiration Date:February 26, 2012

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through 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 stationary ethanol production plant.

Authorized Individual:	Project Manager
Source Address:	2800 W 300 N, Fowler, Indiana 47944
Mailing Address:	98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
General Source Phone Number:	(765) 884-9320
SIC Code:	2869
County Location:	Benton
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

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

(a) One (1) grain receiving area, approved for construction in 2007, receiving a maximum of 730,548 tons of grain per year, consisting of the following:

(1) One (1) truck receiving area identified as T-Rcvg, with a maximum capacity of 20,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-1, and exhausting through stack S-1.

(2) One (1) railcar receiving area, identified as R-Rcvg, with a maximum capacity of 20,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-2, and exhausting through stack S-2.

(b) One (1) internal handling system, approved for construction in 2007, consisting of the following:

(1) One (1) drag conveyor, identified as Conv 1, with a maximum capacity of 30,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-3, and exhausting through stack S-3.

(2) One (1) drag conveyor, identified as Conv 2, with a maximum capacity of 30,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-4, and exhausting through stack S-4.

(3) Four (4) silos, identified as Silo 1, Silo 2, Silo 3, and Silo 4, with a total storage capacity of 1,000,000 bushels of corn.

(4) One (1) surge bin, identified as Surge Bin, with a maximum capacity of 3,300 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-5, and exhausting through stack S-5.

(c) Four (4) hammermills, identified as Hammermill A, Hammermill B, Hammermill C, and Hammermill D, approved for construction in 2007, each with a maximum throughput rate of 1100 bushels of corn per hour, controlled by baghouses DC-6A, DC-6B, DC-6C, and DC-6D, and exhausting through stack S-6A, S-6B, S-6C, and S-6D, respectively.

(d) One (1) DDGS loadout operation, approved for construction in 2007 with a maximum throughput rate of 215,319 tons per year, controlled by baghouse DC-7, exhausting to stack S-7.

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber, followed by a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) yeast slurry tank, identified as TK-422.

(2) Six (6) fermenters, identified as TK-401A, TK-401B, TK-401C, TK-401D, TK-401E, and TK-401F

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber, followed by a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) beer well, identified as TK 501.

(2) Three (3) distillation strippers, identified as T507, T516, and T533.

(3) One (1) liquefaction tank, identified as TK-307.

(4) One (1) Jet Cooker, identified as ED-306.

(5) One (1) nutrient mix tank, identified as TK-419.

(6) One (1) yeast slurry tank, identified as TK-422.

(7) One (1) vent condenser, identified as E-509.

(8) One (1) final condenser, identified as E-520.

(9) One (1) stripper/rectifier, identified as T-533.

(10) Two (2) molecular sieve units, identified as MOL-581A and MOL-581B.

(11) One (1) evaporation system, identified as EV-700

(12) Four (4) stillage centrifuges, identified as CS-604A, CS-604B, CS-604C, and CS-604D.

(13) One (1) centrate receiver, identified as TK-606, and one (1) centrate surge tank, identified as TK-608.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(g) Three (3) boilers capable of burning natural gas, No. 2 fuel oil, or biodiesel, identified as Boiler 1, Boiler 2, and Boiler 3, approved for construction in 2007, each with a maximum heat input rate of 54.5 MMBtu/hr, with emissions exhausting to stacks S-B1, S-B2, and S-B3, respectively.

Under 40 CFR, Subpart Dc, the boilers are considered to be new steam generating units.

(h) One (1) DDGS dryer and cooling system, with a maximum throughput rate of 215,319 tons of DDGS per year consisting of the following:

(1) One (1) natural gas fired DDGS dryer, identified as DDGS Dryer 1, approved for construction in 2007, with a maximum heat input rate of 43.5 MMBtu/hr and a maximum throughput rate of 107,660 tons of DDGS per year, with emissions venting through a thermal oxidizer, identified as EcoDry1, and exhausting to stack S-EcoDry1.

(2) One (1) natural gas fired DDGS dryer, identified as DDGS Dryer 2, approved for construction in 2007, with a maximum heat input rate of 43.5 MMBtu/hr and a maximum throughput rate of 107,660 tons of DDGS per year, with emissions venting through a thermal oxidizer, identified as EcoDry2, and exhausting to stack S-EcoDry2.

Note: The basis of the EcoDry system is a direct drying process using a closed steam loop with process-integrated thermal oxidation.

(i) One (1) ethanol loading system, consisting of the following:

(1) One (1) rack for trucks, identified as Ethanol Truck Loadout, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour.

(2) One (1) rack for railcars, identified as Ethanol Rail Loadout, approved for construction in 2007, with a maximum throughput rate of 72,000 gallons per hour.

The truck and rail loading processes are controlled by the enclosed flare, identified as Flare, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausts through stack S-Flare. Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

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

This stationary source also includes the following insignificant activities:

(a) Noncontact cooling tower system, identified as CT-1401, with natural draft not regulated under a NESHAP.

(b) Replacement or repair of bags in baghouses and filters in other air filtration equipment.

(c) Paved roads and parking lots with public access. [326 IAC 6-4]

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

(e) Closed loop heating and cooling systems.

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

(g) Heat exchanger cleaning and repair.

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

(i) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.

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

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

(l) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) gasoline tank, identified as Tank 808, approved for construction in 2007, storing petroleum material with a vapor pressure equivalent to or less than the vapor pressure of 13 RVP gasoline, with a maximum capacity of 54,500 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(2) Three (3) denatured storage tanks, identified as Tank 810A, Tank 810B, and Tank 810C, approved for construction in 2007, each with a maximum capacity of 700,000 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(3) Two (2) ethanol storage tanks, identified as Tank 801A and Tank 801B, approved for construction in 2007, each with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(4) One (1) ethanol recycle product tank, identified as Tank 803, approved for construction in 2007, with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(5) One (1) syrup tank, identified as TK-724, approved for construction in 2007.

(6) One (1) process water tank, identified as TK-1201, approved for construction in 2007.

(7) One (1) whole stillage tank, identified as TK-601, approved for construction in 2007.

Under 40 CFR 60, Subpart Kb, storage tanks Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C are considered to be new volatile organic liquid storage tanks.

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

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

SECTION B GENERAL CONDITIONS

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

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

B.2 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)] [326 IAC 2-5.1-4][326 IAC 2-8]

This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 and [326 IAC 2-8] when prior to the start of operation, the following requirements are met:

(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as proposed in the application or the permit. The emission units covered in this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.

(c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

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

(a) This permit, F007-23773-00018, 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) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.5 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.6 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, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.7 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.8 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.9 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.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 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 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, as IDEM, OAQ may require to determine the compliance status of the source.

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

B.12 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.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall 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 an "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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.14 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 ahealth-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

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

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

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

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

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865

(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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

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

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

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

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

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

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

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

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

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

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

B.15 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to F007-23773-00018 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

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

B.16 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.17 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

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

Indiana Department of Environmental Management
Compliance 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 not need to be included in this report.

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

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

B.18 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

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

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

(1) That this permit contains a material mistake.

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

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

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

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

B.19 Permit Renewal [326 IAC 2-8-3(h)]

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

Request for renewal shall be submitted to:

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

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

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

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

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

B.20 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.21 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

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

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

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

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

(4) The Permittee notifies the:

Indiana Department of Environmental Management
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, for public review.

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

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

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

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

B.22 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.23 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

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

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

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

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

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

B.24 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.25 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

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

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

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

B.26 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

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

(2) The potential to emit 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) The potential to emit particulate matter (PM) from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

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

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

C.3 Opacity [326 IAC 5-1]

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

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

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A,

Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

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

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

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

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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

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

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

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

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

Indiana Department of Environmental Management
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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

(g) Indiana 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.

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

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

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than180 days after initial start-up, if specified in Section D of this approval. 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

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

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

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

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

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

C.12 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.13 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.14 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.15 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

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

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

(1) initial inspection and evaluation;

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

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

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

(1) monitoring results;

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

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.16 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.17 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.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

Indiana Department of Environmental Management
Compliance Data Section, 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 an "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 this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

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

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

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

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

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

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

SECTION D.1 FACILITY OPERATION CONDITIONS – Grain and DDGS Handling Processes

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

(a) One (1) grain receiving area, approved for construction in 2007, receiving a maximum of 730,548 tons of grain per year, consisting of the following:

(1) One (1) truck receiving area identified as T-Rcvg, with a maximum capacity of 20,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-1, and exhausting through stack S-1.

(2) One (1) railcar receiving area, identified as R-Rcvg, with a maximum capacity of 20,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-2, and exhausting through stack S-2.

(b) One (1) internal handling system, approved for construction in 2007, consisting of the following:

(1) One (1) drag conveyor, identified as Conv 1, with a maximum capacity of 30,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-3, and exhausting through stack S-3.

(2) One (1) drag conveyor, identified as Conv 2, with a maximum capacity of 30,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-4, and exhausting through stack S-4.

(3) Four (4) silos, identified as Silo 1, Silo 2, Silo 3, and Silo 4, with a total storage capacity of 1,000,000 bushels of corn.

(4) One (1) surge bin, identified as Surge Bin, with a maximum capacity of 3,300 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-5, and exhausting through stack S-5.

(c) Four (4) hammermills, identified as Hammermill A, Hammermill B, Hammermill C, and Hammermill D, approved for construction in 2007, each with a maximum throughput rate of 1100 bushels of corn per hour, controlled by baghouses DC-6A, DC-6B, DC-6C, and DC-6D, and exhausting through stack S-6A, S-6B, S-6C, and S-6D, respectively.

(d) One (1) DDGS loadout operation, approved for construction in 2007 with a maximum throughput rate of 215,319 tons per year, controlled by baghouse DC-7, exhausting to stack S-7.

Insignificant Activity:

(d) Paved roads and parking lots with public access. [326 IAC 6-4]

(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.

Operation Conditions

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

D.1.4 PM and PM10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]

(a) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the PM and PM10 emissions from the following units shall not exceed the emission limits listed in the table below.

Unit Description	Baghouse ID	PM10 Emission Limit (lbs/hr)
Truck or Rail Receiving (R-Rcvg)	DC-1	2.06
Straight / Hopper Truck Receiving (T-Rcvg)	DC-2	2.06
Grain Handling (Conv 1)	DC-3	1.51
Grain Handling (Conv 2)	DC-4	1.51
Surge Bin	DC-5	0.07
Hammermill A	DC-6-A	0.37
Hammermill B	DC-6-B	0.37
Hammermill C	DC-6-C	0.37
Hammermill D	DC-6-D	0.37
DDGS Loadout	DC-7	0.32

(b) The total grain received shall not exceed 730,548 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total DDGS loadout shall not exceed 215,319 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) The operating hours for the grain receiving operations and Conveyor #1, identified as R-Rcvg, T-Rcvg, and Conv 1, shall each not exceed 4,000 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(e) The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

Combined with the PM/PM10 emissions from other emission units, the PM/PM10 emissions from the entire source are limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.1.5 Particulate Emission Limitations [326 IAC 6-3-2]

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

Emission Unit	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Truck or Rail Receiving (R-Rcvg)	560	70.3
Straight / Hopper Truck Receiving (T-Rcvg)	560	70.3
Grain Handling (Conv 1)	840	75.4
Grain Handling (Conv 2)	840	75.4
Surge Bin	92.4	50.5
Hammermill A	30.8	40.2
Hammermill B	30.8	40.2
Hammermill C	30.8	40.2
Hammermill D	30.8	40.2
DDGS Loadout	24.6	35.1
Silo 1	83.1	49.4
Silo 2	83.1	49.4
Silo 3	83.1	49.4
Silo 4	83.1	49.4

The pounds per hour limitations were calculated using the following equation:

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

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

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

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

Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limits shown in the table above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gases.

D.1.6 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 any control devices.

Compliance Determination Requirements

D.1.7 Particulate Control

(a) In order to comply with Conditions D.1.4(a) and D.1.5, each of the following emission units shall be controlled by the associated baghouse, as listed in the table below, when these units are in operation:

Unit Description	Baghouse ID
Truck or Rail Receiving (R-Rcvg)	DC-1
Straight / Hopper Truck Receiving (T-Rcvg)	DC-2
Grain Handling (Conv 1)	DC-3
Grain Handling (Conv 2)	DC-4
Surge Bin	DC-5
Hammermill A	DC-6-A
Hammermill B	DC-6-B
Hammermill C	DC-6-C
Hammermill D	DC-6-D
DDGS Loadout	DC-7

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

In order to demonstrate compliance with Conditions D.1.4(a) and D.1.5:

(a) The Permittee shall perform PM and PM10 testing for baghouses DC-1, DC-2, DC-3, DC-4, DC-5, and DC-7 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 includes filterable and condensible PM10.

(b) The Permittee shall perform PM and PM10 testing for one of the baghouses (DC-6-A, DC-6-B, DC-6-C, and DC-6-D), within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated on a different baghouse at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 includes filterable and condensible PM10.

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

D.1.9 Visible Emissions Notations

(a) Visible emission notations of the baghouse stack exhausts (stacks S-1, S-2, S-3, S-4, S-5, S-6-A, S-6-B, S-6-C, S-6-D, and S-7) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor 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 or contractor is a person who has worked or trained 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.1.10 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving and handling operations (R-Rcvg, T-Rcvg, Conv 1, Conv 2, and Surge Bin), the hammermills (Hammermill A, Hammermill B, Hammermill C, Hammermill D), and the DDGS handling and loadout operations (DDGS Loadout), at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

D.1.11 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 line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

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

D.1.12 Record Keeping Requirements

(a) To document compliance with Condition D.1.4(b), the Permittee shall maintain monthly records of the amount of grain received at this plant.

(b) To document compliance with Condition D.1.4(c), the Permittee shall maintain monthly records of the amount of DDGS loadout.

(c) To document compliance with Condition D.1.4(d), the Permittee shall maintain monthly records of the operating hours for R-Rcvg, T-Rcvg, and Conv 1.

(d) To document compliance with Condition D.1.4(e), the Permittee shall maintain records at the dates and times that sweeping is performed on the paved roads.

(e) To document compliance with Condition D.1.9, the Permittee shall maintain records of daily visible emission notations of the baghouse stack exhausts.

(f) To document compliance with Condition D.1.10, the Permittee shall maintain daily records of pressure drop for baghouses during normal operation.

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

D.1.13 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.4(b) and D.1.4(c) shall be submitted 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).

SECTION D.2 FACILITY OPERATION CONDITIONS – Fermentation and Distillation Process

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

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber, followed by a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) yeast slurry tank, identified as TK-422.

(2) Six (6) fermenters, identified as TK-401A, TK-401B, TK-401C, TK-401D, TK-401E, and TK-401F

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber, followed by a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) beer well, identified as TK 501.

(2) Three (3) distillation strippers, identified as T507, T516, and T533.

(3) One (1) liquefaction tank, identified as TK-307 .

(4) One (1) Jet Cooker, identified as ED-306.

(5) One (1) nutrient mix tank, identified as TK-419.

(6) One (1) yeast slurry tank, identified as TK-422.

(7) One (1) vent condenser, identified as E-509.

(8) One (1) final condenser, identified as E-520.

(9) One (1) stripper/rectifier, identified as T-533.

(10) Two (2) molecular sieve units, identified as MOL-581A and MOL-581B.

(11) One (1) evaporation system, identified as EV-700

(12) Four (4) stillage centrifuges, identified as CS-604A, CS-604B, CS-604C, and CS-604D.

(13) One (1) centrate receiver, identified as TK-606, and one (1) centrate surge tank, identified as TK-608.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(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.2.1 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.2.2 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.2.3 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

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

D.2.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the control system (Ethanol Absorber and RTO1), which is used to control the emissions from the fermentation and distillation processes:

(a) PM/PM10 emissions shall not exceed 0.019 lbs/hr.

(b) VOC emissions shall not exceed 6.12 lbs/hr.

(c) CO emissions shall not exceed 0.21 lbs/hr.

(d) SO_2 emissions shall not exceed 0.0016 lbs/hr.

(e) NOx emissions shall not exceed 0.13 lbs/hr.

(f) Acetaldehyde emissions shall not exceed 0.082 lbs/hr.

(g) Total HAP emissions shall not exceed 0.087 lbs/hr.

Combined with the PM/PM10, VOC, SO_2, CO, and NOx emissions from other units, the PM/PM10, SO_2, VOC, CO, NOx emissions from the entire source are each limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total

HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.2.5 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall control the VOC emissions from the fermentation and distillation processes with a Best Available Control Technology (BACT), which has been determined to be the following:

(a) The VOC emissions from the fermentation and distillation processes shall be controlled by the wet scrubber, identified as Ethanol Absorber, and the thermal oxidizer, identified as RTO1.

(b) The overall efficiency for the wet scrubber and thermal oxidizer control system identified as Ethanol Absorber and RTO1 (including the overall capture efficiency and overall destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The total VOC emissions from the outlet of the wet scrubber and thermal oxidizer control system stack (S-RTO1) shall not exceed 6.12 lbs/hr.

D.2.6 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60, Subpart VV, the Permittee shall comply with the requirement of Section E.1 for pumps; compressors; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

D.2.7 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 any control devices.

Compliance Determination Requirements

D.2.8 VOC and HAP Control

In order to comply with Conditions D.2.4 and D.2.5, the wet scrubber and thermal oxidizer control system (Ethanol Absorber and RTO1) shall be in operation and control emissions from the fermentation and distillation processes at all times that these units are in operation.

D.2.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]

In order to demonstrate compliance with Conditions D.2.4 and D.2.5, the Permittee shall perform VOC (including emission rate, overall destruction efficiency and overall capture efficiency), NOx, CO, and Acetaldehyde testing on the outlet of the wet scrubber and thermal oxidizer control system stack (S-RTO1) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.2.10 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the wet scrubber and thermal oxidizer control system stack (S-RTO1) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable 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.2.11 Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTO system (RTO1) 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 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 1,400°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.2.4 and D.2.5, as approved by IDEM.

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

D.2.12 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 limits in Conditions D.2.4 and D.2.5, 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.2.13 Scrubber Pressure Drop and Flow Rate

The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber identified as Ethanol Absorber at least once per day when the fermentation and/or the distillation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 6.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 10.7 gallons per minute, 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 mentioned 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.2.14 Scrubber Detection

In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have 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). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

D.2.15 Record Keeping Requirements

(a) To document compliance with Condition D.2.10, the Permittee shall maintain records of once per day visible emission notations of the stack S-RTO1.

(b) To document compliance with Condition D.2.11, the Permittee shall maintain continuous temperature records for the thermal oxidizer (RTO1) and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(c) Following completion of the stack test and in order to document compliance with Condition D.2.12, the Permittee shall maintain daily records of the duct pressure or fan amperage for the RTO1.

(d) To document compliance with Condition D.2.13, the Permittee shall maintain daily records of pressure drop and flow rate for the scrubber identified as Ethanol Absorber during normal operation.

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

SECTION D.3 FACILITY OPERATION CONDITIONS – Boilers

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

(g) Three (3) boilers capable of burning natural gas, No. 2 fuel oil, or biodiesel, identified as Boiler 1, Boiler 2, and Boiler 3, approved for construction in 2007, each with a maximum heat input rate of 54.5 MMBtu/hr, with emissions exhausting to stacks S-B1, S-B2, and S-B3, respectively.

Under 40 CFR, Subpart Dc, the boilers are considered to be new steam generating units.

(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.3.1 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.3.2 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.3.3 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

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

D.3.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

(a) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the input of natural gas to the boilers shall be limited to 1432.3 MMCF per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purpose of determining compliance with this limit, one gallon of No.2 fuel oil or biodiesel shall be considered equal to 5.77E-4 million cubic feet of natural gas equivalents, based on nitrogen oxide emissions.

(b) When burning No. 2 fuel oil or biodiesel:

(1) NOx emissions shall not exceed 28.9 pounds per kgal.

(2) CO emissions shall not exceed 9.8 pounds per kgal.

(3) SO_2 emissions shall not exceed 72.8 pounds per kgal.

(c) When burning natural gas:

(1) NOx emissions shall not exceed 50.0 pounds per MMCF.

(2) CO emissions shall not exceed 55.0 pounds per MMCF.

Combined with the NOx, SO_2, and CO emissions from other units, the NOx, SO_2, and CO emissions from the entire source are limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.3.5 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating: Emission Limitations for facilities specified in 326 IAC 6-2-1(d)), the PM emissions from the boilers shall not exceed 0.289 pounds per million Btu heat input (lb/MMBtu). This limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$ where Q = total source heat input capacity (MMBtu/hr)

For these units, Q = 163.5 MMBtu/hr.

D.3.6 New Source Performance Standards for Small Industrial - Commercial - Institutional Steam Generating Units [326 IAC 12][40 CFR 60, Subpart Dc]

Pursuant to 40 CFR 60, Subpart Dc, the Permittee shall comply with the requirements of Section E.2 for the boilers.

D.3.7 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.3.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.3.4, the Permittee shall perform NO_x and CO testing for one of the boilers (Boiler 1, Boiler 2, and Boiler 3) within sixty (60) days after achieving the maximum capacity, but not later than one hundred eighty (180) days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated on a different boiler 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.

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

D.3.9 Record Keeping Requirements

(a) To document compliance with Condition D.3.4, the Permittee shall maintain daily records of the amount and type of fuel combusted in the boilers.

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

D.3.10 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.3.4 shall be submitted 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).

SECTION D.4 FACILITY OPERATION CONDITIONS – Dryer and Cooling System

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

(h) One (1) DDGS dryer and cooling system, with a maximum throughput rate of 215,319 tons of DDGS per year consisting of the following:

(1) One (1) natural gas fired DDGS dryer, identified as DDGS Dryer 1, approved for construction in 2007, with a maximum heat input rate of 43.5 MMBtu/hr and a maximum throughput rate of 107,660 tons of DDGS per year, with emissions venting through a thermal oxidizer, identified as EcoDry1, and exhausting to stack S-EcoDry1.

(2) One (1) natural gas fired DDGS dryer, identified as DDGS Dryer 2, approved for construction in 2007, with a maximum heat input rate of 43.5 MMBtu/hr and a maximum throughput rate of 107,660 tons of DDGS per year, with emissions venting through a thermal oxidizer, identified as EcoDry2, and exhausting to stack S-EcoDry2.

Note: The basis of the EcoDry system is a direct drying process using a closed steam loop with process-integrated thermal oxidation.

(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 there under, 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

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

D.4.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for thermal oxidation systems, identified as EcoDry1 and EcoDry2, which are used to control the emissions from the DDGS drying and cooling systems (DDGS Dryer 1 and DDGS Dryer 2):

(a) PM/PM10 emissions shall not exceed 3.0 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2).

(b) VOC emissions shall not exceed 2.0 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2).

(c) CO emissions shall not exceed 5.00 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2).

(d) SO_2 emissions shall not exceed 0.26 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2).

(e) NOx emissions shall not exceed 6.4 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2).

(f) Acetaldehyde emissions shall not exceed 0.69 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2).

(g) Total HAP emissions shall not exceed 1.29 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2).

Combined with the PM/PM10, VOC, SO_2, CO, and NOx emissions from other units, the PM/PM10, SO_2, VOC, CO, NOx emissions from the entire source are each limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.4.5 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall control the VOC emissions from each of the DDGS drying and cooling systems (DDGS Dryer 1 and DDGS Dryer 2) with a Best Available Control Technology (BACT), which has been determined to be the following:

(a) The VOC emissions from the DDGS dryer and cooling systems (DDGS Dryer 1 and DDGS Dryer 2) shall be controlled by thermal oxidation systems, identified as EcoDry1 and EcoDry2, respectively.

(b) The overall efficiency for the thermal oxidation systems, identified as EcoDry1 and EcoDry2 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The total VOC emissions from each of the thermal oxidation system stacks (S-EcoDry1 and S-EcoDry2) shall not exceed 2.0 lbs/hr.

D.4.6 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Emission Unit	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
DDGS Dryer 1	24.6	35.1
DDGS Dryer 2	24.6	35.1

The pounds per hour limitations were calculated using the following equation:

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

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.4.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.4.8 Particulate Control

In order to comply with Conditions D.4.4 and D.4.6, the thermal oxidizers (EcoDry1 and EcoDry2) shall be in operation and control emissions from the DDGS dryers (DDGS Dryer 1 and DDGS Dryer 2) at all times that these units are in operation.

D.4.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.4.4, D.4.5, and D.4.6, the Permittee shall perform PM, PM10, VOC (including emission rate, destruction efficiency, and capture efficiency), NOx, CO, and Acetaldehyde testing for each of the thermal oxidizer stacks (S-EcoDry1 and S-EcoDry2) within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM10 includes filterable and condensible PM10. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.4.10 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the thermal oxidizers (stacks S-EcoDry1 and S-EcoDry2) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor 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 or contractor is a person who has worked or trained 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.4.11 Thermal Oxidation Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizers (EcoDry1 and EcoDry2) 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 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 oxidizers at or above the 3-hour average temperature of 1,400°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.4.4 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 thermal oxidizers at or above the hourly average temperature as observed during the compliant stack test.

D.4.12 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 limits in Conditions D.4.4 and D.4.5, as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizers are 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.

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

D.4.13 Record Keeping Requirements

(a) To document compliance with Condition D.4.10, the Permittee shall maintain records of once per day visible emission notations of stacks S-EcoDry1 and S-EcoDry2.

(b) To document compliance with Condition D.4.11, the Permittee shall maintain continuous temperature records for the thermal oxidizers and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(c) To document compliance with Condition D.4.12, the Permittee shall maintain daily records of the duct pressure or fan amperage for the thermal oxidizers (EcoDry1 and EcoDry2).

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

SECTION D.5 FACILITY OPERATION CONDITIONS – Ethanol Loading Racks

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

(i) One (1) ethanol loading system, consisting of the following:

(1) One (1) rack for trucks, identified as Ethanol Truck Loadout, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour.

(2) One (1) rack for railcars, identified as Ethanol Rail Loadout, approved for construction in 2007, with a maximum throughput rate of 72,000 gallons per hour.

The truck and rail loading processes are controlled by the enclosed flare, identified as Flare, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausts through stack S-Flare. Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(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.5.1 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 there under, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.5.2 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.5.3 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

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

D.5.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the ethanol loading racks:

(a) The total denatured ethanol load-out from the ethanol loading system shall not exceed 74,460,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The Permittee shall use a smokeless flare identified as Flare to control the emissions from the ethanol loading system.

(c) CO emissions from the Flare shall not exceed 0.084 lbs/kgal.

(d) NOx emissions from the Flare shall not exceed 0.0334 lbs/kgal.

(e) VOC emissions from the Flare shall not exceed 0.112 lbs/kgal.

(f) The ethanol loading rack shall utilize submerged loading methods.

(g) The railcars and trucks shall not use vapor balance services.

Combined with the VOC, CO, NOx and HAP emissions from other units, the VOC, CO, and NOx emissions from the entire source are each limited to less than 100 tons/yr and the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.5.5 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), and the Permittee shall collect and control the VOC emissions from the ethanol loading racks with a Best Available Control Technology (BACT). The BACT for this unit has been determined to be the following:

(a) The VOC emissions from the ethanol loading racks shall be collected and controlled by the enclosed flare identified as Flare.

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

(c) The VOC emissions from the enclosed flare identified as Flare shall not exceed 4.03 lbs/hr.

D.5.6 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60, Subpart VV, the Permittee shall comply with the requirements of Section E.1 for pumps; compressors; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

D.5.7 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 any control devices.

Compliance Determination Requirements

D.5.8 VOC Control

In order to comply with Conditions D.5.4 and D.5.5, enclosed flare (identified as Flare) shall be in operation and control emissions from the ethanol loading system at all times when this unit is in operation.

D.5.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]

In order to demonstrate compliance with Conditions D.5.4 and D.5.5, the Permittee shall perform VOC (including emission rate, destruction efficiency, and capture efficiency), CO, and NOx testing for the enclosed flare (identified as Flare), within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.5.10 Flare Pilot Flame

In order to comply with Conditions D.5.4 and D.5.5, the Permittee shall monitor the presence of a flare pilot flame for the flare (identified as Flare) using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading system is in operation.

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

D.5.11 Record Keeping Requirements

(a) To document compliance with Condition D.5.4(a), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out from the ethanol loading system.

(b) To document compliance with Condition D.5.10, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the ethanol loading system is in operation.

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

D.5.12 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.5.4(a) shall be submitted 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).

SECTION D.6 FACILITY OPERATION CONDITIONS – Storage Tanks

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

Insignificant Activities

(l) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) gasoline tank, identified as Tank 808, approved for construction in 2007, storing petroleum material with a vapor pressure equivalent to or less than the vapor pressure of 13 RVP gasoline, with a maximum capacity of 54,500 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(2) Three (3) denatured storage tanks, identified as Tank 810A, Tank 810B, and Tank 810C, approved for construction in 2007, each with a maximum capacity of 700,000 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(3) Two (2) ethanol storage tanks, identified as Tank 801A and Tank 801B, approved for construction in 2007, each with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(4) One (1) ethanol recycle product tank, identified as Tank 803, approved for construction in 2007, with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

Under 40 CFR 60, Subpart Kb, storage tanks Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C are considered to be new volatile organic liquid storage tanks.

(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.6.1 Volatile Organic Compounds (VOC) [326 IAC 8-4-3]

(a) Pursuant to 326 IAC 8-4-3(b)(1)(B), the gasoline tank (Tank 808) and the denaturant storage tanks (Tank 810A, Tank 810B, and Tank 810C) shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.

(b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, are equipped with covers, lids, or seals such that:

(1) The cover, lid or seal in the closed potion 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.

(c) Pursuant to 326 IAC 8-4-3(d), the Permittee shall maintain the following records for a period of two (2) years for the gasoline tank (Tank 808) and the denaturant storage tanks (Tank 810A, Tank 810B, and Tank 810C):

(1) The types of volatile petroleum liquid stored;

(2) The maximum true vapor pressure of the liquids as stored; and

(3) The results of the inspections performed on the storage vessels.

The above records shall be made available to the IDEM, OAQ upon written request.

D.6.2 Storage Tanks [326 IAC 12][40 CFR 60, Subpart Kb]

Pursuant to 40 CFR 60, Subpart Kb, the Permittee shall comply with the requirements of Section E.3 for Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C.

D.6.3 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 any control devices.

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

D.6.4 Record Keeping Requirements

(a) To document compliance with Condition D.6.1, the Permittee shall maintain the following records for the gasoline tank (Tank 808) and the denaturant storage tanks (Tank 810A, Tank 810B, and Tank 810C):

(1) The types of volatile petroleum liquid stored;

(2) The maximum true vapor pressure of the liquids as stored; and

(3) The results of the inspections performed on the storage vessels.

(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)]:

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber and a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) yeast slurry tank, identified as TK-422.

(2) Six (6) fermenters, identified as TK-401A, TK-401B, TK-401C, TK-401D, TK-401E, and TK-401F

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber and a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) beer well, identified as TK 501.

(2) Three (3) distillation strippers, identified as T507, T516, and T533.

(3) One (1) liquefaction tank, identified as TK-307 .

(4) One (1) Jet Cooker, identified as ED-306.

(5) One (1) nutrient mix tank, identified as TK-419.

(6) One (1) yeast slurry tank, identified as TK-422.

(7) One (1) vent condenser, identified as E-509.

(8) One (1) final condenser, identified as E-520.

(9) One (1) stripper/rectifier, identified as T-533.

(10) Two (2) molecular sieve units, identified as MOL-581A and MOL-581B.

(11) One (1) evaporation system, identified as EV-700

(12) Four (4) stillage centrifuges, identified as CS-604A, CS-604B, CS-604C, and CS-604D.

(13) One (1) centrate receiver, identified as TK-606, and one (1) centrate surge tank, identified as TK-608.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(i) One (1) ethanol loading system, consisting of the following:

(1) One (1) rack for trucks, identified as Ethanol Truck Loadout, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour.

(2) One (1) rack for railcars, identified as Ethanol Rail Loadout, approved for construction in 2007, with a maximum throughput rate of 72,000 gallons per hour.

The truck and rail loading processes are controlled by the enclosed flare, identified as Flare, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausts through stack S-Flare. Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

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

(a) The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facilities described in this Section E.1 except when otherwise specified in 40 CFR 60, Subpart VV.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

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

E.1.2 Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry [40 CFR Part 60, Subpart VV] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart VV, the Permittee shall comply with the provisions of Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, which are incorporated by reference as 326 IAC 12, as specified as follows:

Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

Source: 48 FR 48335, Oct. 18, 1983, unless otherwise noted.

§ 60.480 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in §60.481) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 5, 1981, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished

without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in §60.486(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) is exempt from §60.482.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §60.482.

(4) Any affected facility that produces beverage alcohol is exempt from §60.482.

(5) Any affected facility that has no equipment in VOC service is exempt from §60.482.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of §60.485(d), (e), and (f), and §60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.481 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$A = Y \times (B \div 100)$;

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 1982 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable for B

Subpart applicable to facility	Value of B to be used in equation
VV	12.5

DDD	12.5
GGG	7.0
KKK	4.5

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007–2900).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice

formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 ppm or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 49 FR 26738, June 29, 1984; 60 FR 43258, Aug. 18, 1995; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482–1 through 60.482–10 or §60.480(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§60.482–1 to 60.482–10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, and 60.482–10 as provided in §60.484.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, or 60.482–10, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§60.482–2 to 60.482–10 if it is identified as required in §60.486(e)(5).

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 78276, Dec. 14, 2000]

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

(a)(1) Each pump in light liquid service shall 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) Each pump in light liquid service shall 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.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482-3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in §60.482–1(c) and paragraph (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system 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

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

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an

audible alarm.

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

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.

(g)(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.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482–10, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in §60.486(e) (1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a)–(h) if the compressor:

(1) 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

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of §60.14 or §60.15 is exempt from §60.482(a), (b), (c), (d), (e), and (h), provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 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.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 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.

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

[60 FR 43258, Aug. 18, 1995, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 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.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 78277, Dec. 14, 2000]

§ 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.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61762, Oct. 17, 2000]

§ 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).

[48 CFR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 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.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 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.

[48 FR 48335, Oct. 18, 1983, as amended at 51 FR 2702, Jan. 21, 1986; 60 FR 43258, Aug. 18, 1995; 61 FR 29878, June 12, 1996; 65 FR 78277, Dec. 14, 2000]

§ 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.

(d) 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.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 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.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 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 of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

[54 FR 6678, Feb. 14, 1989, as amended at 54 FR 27016, June 27, 1989; 65 FR 61763, Oct. 17, 2000]

§ 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.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.487 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of §60.482–7, excluding those valves designated for no detectable emissions under the provisions of §60.482–7(f).

(3) Number of pumps subject to the requirements of §60.482–2, excluding those pumps designated for no detectable emissions under the provisions of §60.482–2(e) and those pumps complying with §60.482–2(f).

(4) Number of compressors subject to the requirements of §60.482–3, excluding those compressors designated for no detectable emissions under the provisions of §60.482–3(i) and those compressors complying with §60.482–3(h).

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in §60.482(7)(b) or §60.483–2,

(ii) Number of valves for which leaks were not repaired as required in §60.482–7(d)(1),

(iii) Number of pumps for which leaks were detected as described in §60.482–2(b) and (d)(6)(i),

(iv) Number of pumps for which leaks were not repaired as required in §60.482–2(c)(1) and (d)(6)(ii),

(v) Number of compressors for which leaks were detected as described in §60.482–3(f),

(vi) Number of compressors for which leaks were not repaired as required in §60.482–3(g)(1), and

(vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§60.483–1 or 60.483–2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61763, Oct. 17, 2000]

SECTION E.2 FACILITY OPERATION CONDITIONS

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

(g) Three (3) boilers capable of burning natural gas, No. 2 fuel oil, or biodiesel, identified as Boiler 1, Boiler 2, and Boiler 3, approved for construction in 2007, each with a maximum heat input rate of 54.5 MMBtu/hr, with emissions exhausting to stacks S-B1, S-B2, and S-B3, respectively.

Under 40 CFR, Subpart Dc, the boilers are considered to be new steam generating units.

(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 [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for Boiler 1, Boiler 2, and Boiler 3 except as otherwise specified in 40 CFR Part 60, Subpart Dc.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

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

E.2.2 Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units Requirements [40 CFR Part 60, Subpart Dc] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart Dc, the Permittee shall comply with the provisions of Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, which are incorporated by reference as 326 IAC 12, for Boiler 1, Boiler 2, and Boiler 3 as specified as follows:

Subpart Dc —Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units which meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under §60.14.

(e) Heat recovery steam generators that are associated with combined cycle gas turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/h) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/h) heat input of fossil fuel. If the heat recovery steam generator is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The gas turbine emissions are subject to subpart GG or KKKK, as applicable, of this part).

(f) Any facility covered by subpart AAAA of this part is not covered by this subpart.

(g) Any facility covered by an EPA approved State or Federal section 111(d)/129 plan implementing subpart BBBB of this part is not covered by this subpart.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996; 71 FR 9884, Feb. 27, 2006]

§ 60.41c Definitions.

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

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388–77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Cogeneration steam generating unit means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, "Standard Specification for Fuel Oils" (incorporated by reference—see §60.17).

Dry flue gas desulfurization technology means a sulfur dioxide (SO_2) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under §60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

Natural gas means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835–86, 87, 91, or 97, "Standard Specification for Liquefied Petroleum Gases" (incorporated by reference—see §60.17).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, "Standard Specification for Fuel Oils" (incorporated by reference—see §60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Wet flue gas desulfurization technology means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or SO_2.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996; 65 FR 61752, Oct. 17, 2000; 71 FR 9884, Feb. 27, 2006]

§ 60.42c Standard for sulfur dioxide.

(d) On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), or (3) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under §60.48c(f)(1), (2), or (3), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(3) Coal-fired facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(i) The SO_2 emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9884, Feb. 27, 2006]

§ 60.43c Standard for particulate matter.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

(e)(1) On or after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, gas, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter emissions in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2) and (e)(3) of this section. Affected facilities subject to this paragraph, are also subject to the requirements of paragraphs (c) and (d) of this section.

(2) As an alternative to meeting the requirements of paragraph (e)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the performance test required to be conducted under §60.8 is completed, the owner or operator subject to the provisions of this subpart shall not cause to be discharged into the atmosphere from any affected facility for which modification commenced after February 28, 2005, any gases that contain particulate matter in excess of:

(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, gas, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels, and

(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, gas, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

(3) On or after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter emissions in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9885, Feb. 27, 2006]

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

(a) Except as provided in paragraphs (g) and (h) of this section and in §60.8(b), performance tests required under §60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in §60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under §60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under §60.46c(d)(2).

(h) For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under §60.48c(f)(1), (2), or (3), as applicable.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

(c) Units that burn only oil containing no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required to conduct emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9885, Feb. 27, 2006]

§ 60.46c Emission monitoring for sulfur dioxide

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO_2 emission limits under §60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO_2 concentrations and either oxygen or carbon dioxide concentrations at the outlet of the SO_2 control device (or the outlet of the steam generating unit if no SO_2 control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under §60.42c shall measure SO_2 concentrations and either oxygen or carbon dioxide concentrations at both the inlet and outlet of the SO_2 control device.

(d) As an alternative to operating a CEMS at the inlet to the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by using Method 6B. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fule tank is filled and

before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B may be used in lieu of CEMS to measure SO_2 at the inlet or outlet of the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and carbon dioxide measurement train operated at the candidate location and a second similar train operated according to the procedures in §3.2 and the applicable procedures in section 7 of Performance Specification 2 (appendix B). Method 6B, Method 6A, or a combination of Methods 6 and 3 or Methods 6C and 3A are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, as described under §60.48c(f) (1), (2), or (3), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.47c Emission monitoring for particulate matter.

(c) Units that burn only oil that contains no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required to conduct PM emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9886, Feb. 27, 2006]

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §60.42c, or §60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 emission limits of §60.42c, or the PM or opacity limits of §60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B.

(c) The owner or operator of each coal-fired, residual oil-fired, or wood-fired affected facility subject to the opacity limits under §60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility which occur during the reporting period.

(d) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall submit reports to the Administrator.

(e) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.43c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO_2 emission rate (nj/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO_2 emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO_2 or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph

(f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier; and

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The owner or operator of an affected facility that only burns very low sulfur fuel oil or other liquid or gaseous fuels with potential sulfur dioxide emissions rate of 140 ng/J (0.32 lb/MMBtu) heat input or less shall record and maintain records of the fuels combusted during each calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-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.

[55 FR 37683, Sept. 12, 1990, as amended at 64 FR 7465, Feb. 12, 1999; 65 FR 61753, Oct. 17, 2000; 71 FR 9886, Feb. 27, 2006]

SECTION E.3 FACILITY OPERATION CONDITIONS

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

(f) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) gasoline tank, identified as Tank 808, approved for construction in 2007, storing petroleum material with a vapor pressure equivalent to or less than the vapor pressure of 13 RVP gasoline, with a maximum capacity of 54,500 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(2) Three (3) denatured storage tanks, identified as Tank 810A, Tank 810B, and Tank 810C, approved for construction in 2007, each with a maximum capacity of 700,000 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(3) Two (2) ethanol storage tanks, identified as Tank 801A and Tank 801B, approved for construction in 2007, each with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(4) One (1) ethanol recycle product tank, identified as Tank 803, approved for construction in 2007, with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

Under 40 CFR 60, Subpart Kb, storage tanks Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C are considered to be new volatile organic liquid storage tanks.

(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 [326 IAC 2-7-5(1)]

E.3.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C except as otherwise specified in 40 CFR Part 60, Subpart Kb.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

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

E.3.2 Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) [40 CFR Part 60, Subpart Kb] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart Kb, the Permittee shall comply with the provisions of Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), which are incorporated by reference as 326 IAC 12, for Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C as specified as follows:

Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)

Source: 52 FR 11429, April 8, 1987, unless otherwise noted.

§ 60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel 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; or

(ii) A storage vessel with a design capacity greater than 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.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003]

§ 60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

Bulk gasoline plant means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see §60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17);

(4) Any other method approved by the Administrator.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

Process tank means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see §60.17).

Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;

(2) Subsurface caverns or porous rock reservoirs; or

(3) Process tanks.

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

Waste means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000; 68 FR 59333, Oct. 15, 2003]

§ 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.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 68 FR 59333, Oct. 15, 2003]

§ 60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
FESOP Permit No.: F007-23773-00018

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: 317-233-0178
Fax: 317-233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
FESOP Permit No.: F007-23773-00018

This form consists of 2 pages **Page 1 of 2**

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

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

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

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

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

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

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: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
FESOP Permit No.: F007-23773-00018
Facility: Boiler 1, Boiler 2, and Boiler 3
Parameter: Natural Gas Equivalents
Limit: 1432.3 MMCF per 12 consecutive month period, with compliance determined at the end of each month. For the purpose of determining compliance with this limit, one gallon of No. 2 fuel oil or biodiesel shall be considered equal to 5.77E-4 million cubic feet of natural gas equivalents, based on nitrogen oxide emissions.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
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: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
FESOP Permit No.: F007-23773-00018
Facility: Grain receiving area
Parameter: Total grain received
Limit: 730,548 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
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: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
FESOP Permit No.: F007-23773-00018
Facility: DDGS Loadout Operation
Parameter: Total DDGS produced
Limit: 215,319 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
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: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
FESOP Permit No.: F007-23773-00018
Facility: Grain Receiving Operations and Conveyor #1
Parameter: Hours of Operation
Limit: 4,000 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
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: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
FESOP Permit No.: F007-23773-00018
Facility: Ethanol Loading System
Parameter: Total denatured ethanol load-out
Limit: 74,460,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
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: Ceres Holdings, LLC
Source Address: 2800 W 300 N, Fowler, Indiana 47944
Mailing Address: 98 S. 100 E., Ste A PO Box 668, Fowler, IN 47944
Part 70 Permit No.: F007-23773-00018

Months: _____ **to** _____ **Year:** _____

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:	

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.

Mail to: Permit Administration & Development Section
Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Ceres Holdings, LLC
98 S. 100 E., Ste A PO Box 668
Fowler, Indiana 47944

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____,I have personal
(Company Name)

knowledge of the representations contained in this affidavit and am authorized to make

these representations on behalf of _____ .
(Company Name)

4. I hereby certify that Ceres Holdings, LLC, 2800 W 300 N, Fowler, Indiana 47944, completed construction of the an ethanol production plant on _____in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on October 16, 2006, and as permitted pursuant to New Source Construction Permit and Federally Enforceable State Operating Permit No. F007-23773-00018, Plant ID No. 007-00018 issued on _____.

Further Affiant said not.
I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature_____

Date_____

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of

Indiana on this _____ day of _____, 20 _____ .

My Commission expires:

Signature_____

_____
Name (typed or printed)

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document
For a New Construction Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Ceres Holdings, LLC
Source Location:	2800 W 300 N, Fowler, Indiana 47944
County:	Benton
SIC Code:	2869
Operation Permit No.:	F007-23773-00018
Permit Reviewer:	ERG/JR

On December 20, 2006, the Office of Air Quality (OAQ) had a notice published in the Benton Review of Fowler, Indiana stating that Ceres Holdings, LLC (Ceres) had applied for a Federally Enforceable State Operating Permit (FESOP) to operate an ethanol manufacturing facility with control. 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.

Comments on the draft permit were submitted by Charles L. Berger of Berger & Berger LLP (attorneys and counselors at law on behalf of Stan Meredith), and David Jordan (Environmental Resources Management). Changes made as a result of these comments are shown throughout this addendum. New language is in **bold** while deleted language is in ~~strikeout~~. The Table of Contents has been updated as necessary.

Berger & Berger LLP Comments

On January 19, 2007, Charles L. Berger of Berger and Berger, LLP (referred to as the "Commenter") submitted comments on the proposed FESOP. The summary of the comments is as follows:

Comment 1:

> We have been unable to make full and complete comments on this draft permit for the reason that we have been denied and our client has been denied his constitutional right to due process of law by the arbitrary and capricious action of IDEM in denying a sufficient amount of time to make comments due to the failure of IDEM to properly send information to the undersigned as requested on January 8, 2007. The request was made to IDEM and IDEM promised to send the information Overnight Delivery to the undersigned. No information was received on Tuesday of this week from IDEM or Wednesday of this week. IDEM refused to grant the extension of time without any basis that meets the test of reasonableness. Their denial was done on a totally arbitrary and capricious basis and denied Mr. Meredith, and his counsel the ability to have full and complete information for these comments.

Response to Comment 1:

IDEM, OAQ did receive a public information request from the commenter on January 8, 2006. The request was made over half way into the Public Notice Period and it is not unreasonable to assume that IDEM, OAQ would need time to gather the requested information. IDEM, OAQ responded to the request as quickly as possible by sending some of the requested information on January 18, 2006 and the rest of the requested information January 26, 2006. Furthermore, IDEM, OAQ disagrees with the Commenter's assertion that the public have been denied access to all relevant information on the proposed facility because all files associated with the proposed permit (including the permit application) were available at the IDEM, OAQ public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate, Indianapolis, and the Benton County Public Library, as specified in the public notice published in the Benton Review of Fowler, Indiana on December 20, 2006.

Comment 2:

The commenter stated that particulate matter emissions exceed the major source threshold for the following reasons regarding fugitive dust from roads:

(a) The TSD and draft permit do not appropriately estimate and limit PM and PM10 emissions from paved haul roads. The TSD calculations estimated that 14.6 tpy of PM and 2.8 tpy of PM1 0 will be emitted from travel over paved roads within the Ceres plant. TSD, App. A., p. 13. The draft permit does not contain any emission limits for these sources or other conditions to assure that emissions remain below those assumed in the potential to emit calculation. The draft permit violates 326 IAC 2-8-4 because it fails to include these emission limits.

(b) The silt loading value used in the emission calculations for paved roads was not appropriate and results in an underestimate of the fugitive PM10 emissions. The commenter provides the following arguments:

(1) Particulate emissions from paved roads vary with the amount of silt on the road surface, referred to as "silt loading." According to the TSD, the paved road emissions were calculated using an equation from AP-42 (AP-42 Sec. 13.2.1 (12/2003)) based on a silt content of 0.6 g/m^2. This silt content value used in the TSD is the default silt loading for typical urban roadways. Indiana Regulations prohibit the use of 0.6 g/m^2. 326 IAC 6-5-1(d)(1) mandates that "Emission factor equations listed in supplements 11.2.1, 11.2.3, and 11.2.6 of the May 1983 edition and no later amendments of "Compilation of Air Pollutant Factors" (AP-42)* shall be used to determine potential emissions for unpaved roads, aggregate handling and storage piles, and paved roads, respectively." The Indiana Regulations go on to provide that: "Where a range of values is available for a source or process as referenced in subdivisions (1) and (2), the mid-value of the range shall be used." If Section 11.2.6 of the May 1983 version of AP-42 was used E = 0.86 (0.090)1 (4/2)(5.9/10)(2,700/1,000)(29/3)°•7 = 1.21 Ib/vmt. This is based on the conservative assumption that the traffic entering the facility is not entering from an unpaved area and that there is not an unpaved shoulder. If either of these was true, the emission factor would be much higher. The calculation is also based on the conservative assumption that there are only two travel lanes. At 1.21 Ib/vmt using the VMT in the TSD, the paved roads will potentially emit 34.16 tpy of fugitive particulate matter. (1.21 Ib/vmt * 56466 VMT/yr /2000 Ib per ton = 34.16193). Using this PTE, the total for the facility is over 114 tpy, which exceeds the major source threshold for PSD and Title V. (94.5 + 34.16 - 14.6 = 114.06 tpy).

(2) Even if 326 IAC 6-5 did not mandate that IDEM must use the methodology above, which it does, the TSD's use of the 0.6 g/m^2 silt loading would still be incorrect. To begin with, the TSD explains that it is using the 12/03 version of AP-42. However, the current version of AP-42 relative to fugitive emissions from

paved roads is the November 2006 version. See http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf. There is no rational reason for IDEM to use the outdated version.

(3) The current version of AP-42 Table 13.2.1-3 (11/06) explains that even for paved roads, the silt loading in the winter has to have a multiplier of 4 so that it becomes 2.4 g/m^2. In addition, there is a temporary adjustment factor for each application of antiskid abrasive. The TSD calculations did not use the winter multiplier for winter emissions nor the adjustment factor for application of antiskid abrasive.

(4) The paved roads of interest here are within the boundary of an industrial site and thus are industrial roadways. Silt loading values of industrial roads are much higher and are reported elsewhere in the same chapter of AP-42. These higher silt loading values for industrial roadways, which range from 7.4 to 292 g/m^2, would result in much higher PM and PM10 emissions from haul roads than assumed in the TSD. AP-42 Sec. 13.2.1-4, Table 13.2.1-4 (11/06).

(5) Minnesota, which has a long history with ethanol plants, has investigated this issue. Measurements made at the ADM-Marshall ethanol facility in the summer of 2001 found silt loadings ranging from 0.76 to 2.93 g/m^2 with no road cleaning. Measurements made at the same facility in the summer of 2003 with road cleaning found silt loadings of 0.70 to 0.72 g/m^2. The cleaning methods used at this ADM facility include daily road sweeping, vacuuming and washing, and truck speeds limited to 5 miles per hour, none of which are required in the Ceres draft permit.[1]

In spite of these measurements, the Minnesota Pollution Control Agency (MPCA) requires the use of 10.0 g/m^2 as the default silt loading for Title V permits. MPCA also requires "good documentation for proposed silt loading values" and expects companies to do "extensive" on-site testing/cleaning or to use the silt loadings for industrial facilities in AP-42, Table 13.2.1-4, as noted above. Minnesota permits require sweeping, vacuuming or washing and testing for silt loading.

(6) Similarly, Nebraska, another state with a long history of permitting ethanol plants, requires the use of a silt loading of 3 g/m^2, unless site-specific test data is provided.[2] Using the Nebraska default silt content of 3 g/m^2, the controlled PM emissions from Ceres haul roads, coupled with the other PM and PM10 PTE, would make Ceres a major source. The increases would be even greater if Ceres used the MPCA Title V default of 10 g/m^2. We believe this higher default is appropriate as Ceres has failed to supply any documented site-specific silt loadings.

(c) The commenter stated that the draft permit must be modified to include emission limits and methods to assure that the claimed emission reduction from periodic sweeping of paved roads is achieved. These should include limits on, and monitoring and reporting of all factors assumed in the emission calculations: number of trucks, weight of trucks, distance trucks travel, and silt content. The Permit also should require controls sufficient to assure that Ceres achieves a 50% reduction in PM/PM10, including speed limits and daily cleaning of all roads. The commenter states that IDEM cannot assume that emissions will be reduced by 50% by "periodic sweeping" because:

(1) In the Draft Permit condition (p. 31, Condition D.1.4.e) that reads: "The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved

[1] Air Modeling - Training, Minnesota Air, Water, and Waste Environmental Conference, February 14, 2006.
[2] ADM Corn Processing, Columbus, Nebraska, Truck Traffic Fugitive Control Strategy and Monitoring Plan, ADM Haul Roads, January 10, 2006.

roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2," the term "periodic" is ambiguous and thus unenforceable. The plain meaning of "periodic" simply means that the event occurs at regular intervals. This draft Permit does not define the interval. Does periodic mean daily? Weekly? Monthly? Something in between? The frequency of sweeping determines the amount of control achieved. Studies done in Minnesota and elsewhere indicate that daily road sweeping, vacuuming and washing (weather permitting) plus speed limit controls (5 mph) are required to achieve 50% control of fugitive PM and PM10 emissions. Permits for ethanol plants in other states require daily sweeping and periodic silt testing to confirm emissions, unless the emissions are based on a high default silt loading, e.g., 3 to 10 g/m^2. Therefore, Ceres cannot rely on this condition to reduce the potential to emit of the haul roads.

(2) For a permit to be enforceable as a practical matter, a permitting agency must include specific legal obligations in the permit so that sources will observe the permit constraints and compliance can be determined.[3] Conditions that are vague, contradictory, or confusing are unenforceable. Vague and subjective terms like "periodic" are unenforceable. The purpose of a permit is to individualize a regulation to site-specific conditions. The subject condition, notwithstanding the incomplete cite to 326 IAC 2-2, fails to do that. No site-specific conditions are included in the Permit to add detail to the term "periodic" or to assure 50% PM/PM10 control. This ambiguous language allows unlimited enforcement discretion in the determination of whether a violation has occurred, and thus is unenforceable.[4] A permit may not reserve agency discretion to determine whether a violation has actually occurred. A condition that only requires "periodic" sweeping, when the underlying potential to emit calculations assumes 50% control, reserves enforcement discretion to IDEM and prevents citizen enforcement of the permit without a decision by IDEM, thus allowing the source to negotiate the condition "off-permit." As a result, reserving enforcement and violation decisions as to haul roads for the agency renders the Permit unenforceable by citizens.

Response to Comment 2:

In regards to the permit not containing any emission limits for paved roads, please refer to the response to comment 8.

IDEM, OAQ has evaluated the silt loading value used in the emission calculations and investigated the claims made by the commenter with regard to the calculations included in the permit. IDEM, OAQ agrees with the commenter that there is a range of silt loading values presented in AP-42 Chapter 13. Public paved road silt loadings are dependent upon: traffic characteristics (speed, ADT, and fraction of heavy vehicles); road characteristics (curbs, number of lanes, parking lanes); local land use (agriculture, new residential construction) and regional/seasonal factors (snow/ice controls, wind blown dust). However, based on IDEM's evaluation, the default silt loading number of 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. According to AP-42, Table 13.2.1-3, the default silt loading number is 0.6 g/m^2 for sites that have average daily traffic less than 500 vehicles per day. The averaged traffic at the proposed ethanol production plant will be about 182 vehicles per day. Furthermore, the types of trucks traveling onto the Ceres property are not expected to be carrying in mud and dirt from unpaved roads because these trucks are traveling onto the Ceres site location from paved roads. Nevertheless, IDEM, OAQ reserves the right to collect site-specific silt loading data if IDEM determines that there is a problem with heavy silt.

[3] National Min. Ass'n v. U.S. EPA, 59 F.3d 1351, 1363 (D.C. Cir. 1995).
[4] In re: Indeck-Elwood, LLC, EAB Slip Opinion, PSD Appeal No. 03-04 (Sept. 27, 2006) at 72 n. 101.

326 IAC 6-5-1(d) applies to sources subject to 326 IAC 6-5. As noted in the TSD, Ceres is not subject to this rule. Also, pursuant to 326 IAC 6-5-1(d)(4), sources may petition the commissioner to use emission factors other than those referenced in to 326 IAC 6-5-1(d)(1). IDEM feels that granting such a petition in this case is warranted as the applicable AP-42 Section was updated in November of 2006. IDEM agrees with the commenter that the emission factor from paved roads should reflect the "Winter Baseline Multiplier" found in Table 13.2.1-3 of Section 13.2. Updated emissions estimates reflecting the winter multiplier for paved roads are included in Appendix A of the TSD Addendum. No adjustment was made to the emission factor to account for the application of antiskid abrasive. As AP-42 indicates, this factor is only to be considered a "temporary" adjustment for each application of such material, therefore, IDEM considers any increase in PM and PM10 emissions from such activities to be negligible.

IDEM, OAQ is aware that the term "periodic" bears a certain amount of discretion; however, IDEM, OAQ believes it is unnecessary to define "periodic". It is unreasonable to require sweeping at a predetermined interval because each facility has different geographical surroundings and will experience different weather patterns. To define "periodic" as daily, monthly, or weekly would present unnecessary requirements; especially, during events such as a snow storm or rain event. IDEM, OAQ believes it is more practical for facility owners to assess their fugitive dust generation and implement control measures (sweeping) as needed; therefore, IDEM, OAQ has included a requirement for the source to keep records of their sweeping (in addition to the amount of grain received and DDGS shipped); and at anytime, IDEM, OAQ reserves the right to require more frequent sweeping if IDEM identifies a problem.

No changes have been made to the permit as the result of this comment.

Comment 3:

The commenter stated that particulate matter emissions may exceed the major source threshold for the following reasons regarding grain receiving emissions:

(a) The TSD contains a confusing typographical error that should be corrected. The Grain Receiving fugitive PTE and Surge Bin PTE are transposed in the chart containing PTE for the facility on page 6 of the TSD. The additional comments below refer to this chart as if it was corrected.

(b) The commenter believes that the PM and PM10 grain receiving fugitive emissions were calculated incorrectly because IDEM assumes in the draft permit that the grain receiving fugitive PM and PM10 will be reduced by 90%. The fugitive emissions were estimated using emission factors from AP42, Chapter 9.9.1 - Grain Elevators, Tables 9.9.1-1 and 9.9.1-2. TSD, App. A, p. 5. The fugitive particulate matter emissions from the two grain receiving pits, labeled RRcvg and T-Rcvg, are uncaptured dust that does not pass through a stack or other controllable point source. The fugitive grain receiving calculation assumes 90% control but provides no means for this control. In fact, there is no control for the two grain receiving pits. There is nothing to assure that the emissions from the grain receiving pits are contained and routed to a control device such as baghouses DC-1 or DC-2. The TSD does not explain how the fugitive emissions are captured or what device ensures that the fugitive emissions are routed to a baghouse. Other recent applicants, such as the Ultimate ethanol facility, have claimed there was a dump shed that captured some of these fugitive emissions. However, the draft permit does not require or even indicate that there is a dump shed. In addition, even if there was a dump shed, there is no basis to believe that it would capture 90% of the fugitives. In fact, Ultimate only claimed that the hypothetical dump shed would only capture 80% of the fugitive emissions.

(c) The PM10 emissions calculations from the grain receiving and handling baghouses must include a safety factor and cannot be solely based on emission rates determined for proper functioning because baghouses frequently malfunction and/or the bags become torn, which allows excess emissions from the control device outlet. The commenter

provides references[5] of industry personnel, environmental control officials, and equipment vendors that indicate there is evidence that operating problems may result in significant periods during which the control equipment is shut down or operating inefficiently. Absent a demonstration that the 95.7% and 96.3% control from the grain receiving and handling baghouses is achievable and enforceable at all times, the potential to emit calculations should be based on the maximum potential emissions, i.e., or the Permit should be appropriately restricted.

Response to Comment 3:

IDEM, OAQ recognizes that the Grain Receiving fugitive PTE and Surge Bin PTE are transposed in the chart containing PTE for the facility on page 6 of the TSD. However, no change has been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice.

With regard to the expected reductions in fugitive PM and PM10 emissions from grain receiving, IDEM, OAQ believes that the permit does effectively limit fugitive PM and PM10 emissions from the grain receiving area by means of a grain throughput limit. The fugitive emissions are directly correlated to the throughput (which is limited in the permit), and the Permittee is required to keep monthly records of this throughput. IDEM feels that 90% is a conservative control estimate for an unloading operation occurring within a building (in this case, a dump shed with doors). As the applicant indicates this is the design of the grain receiving operation, no specific limitation on the dump shed design is needed as the applicant is required to submit an affidavit of construction indicating the facility was constructed as indicated in their application. Provided the source complies with the throughput limit and uses the grain receiving baghouses (DC-1 and DC-2) as required, it is expected that the grain receiving baghouses will capture 90% of the PM and PM10 emissions from the grain receiving process; therefore only 10% of the PM and PM10 emissions from the grain receiving operations are considered fugitive emissions. While the uncontrolled component of fugitive emissions were calculated using the AP-42 emission factor, the Department feels that using the site-specific baghouse design parameters provides a more reliable, and conservative, emissions estimate for each baghouse stack. Ceres is required to conduct stack testing on these baghouses to verify compliance with the emission limit of 2.06 lb/hr each.

In regards to the commenter's concern that the grain receiving and handling emission calculations must include a safety factor, IDEM, OAQ feels that the specific monitoring requirements in the permit regarding baghouses ensures that baghouse malfunctions are minimized. IDEM, OAQ believes that monitoring the pressure drop across the baghouses, is important for determining the proper operation of the control equipment. The Permittee is required to take reasonable response steps when a compliance monitoring parameter is determined to be out of range or abnormal under Condition C.15 - Response to Excursions or Exceedances. This condition ensures that the control equipment is returned to proper operation as soon as practicable, while still allowing the Permittee the flexibility to respond to situations that were not anticipated. In addition, visible emission notations are also used as a trigger that the source perform some corrective action on the facility if visible emissions are abnormal, which helps ensure continuous compliance with emission limitations.

No changes have been made to the permit as a result of this comment.

Comment 4:

The commenter stated that VOC emissions exceed the major source threshold for the following

[5] D. Wallace and V. Ramananthan, Review of Compliance Monitoring Programs with Respect to Grain Elevators, U.S. Environmental Protection Agency Contract No. 68-01-4139, WA 14, US. Environmental Protection Agency, Research Triangle Park, NC, 1980, pp. 15-16; in: A. Buonicore and W. Davis (eds.), Air Pollution Control Manual, Grain Handling and Processing, Van Nostrand Reynold, New York, NY, 1992, pp. 517-528.

reasons:

(a) The draft permit and TSD inappropriately calculate loading losses from ethanol loading. To show that VOC emissions from loading losses will remain under major source thresholds, the draft Permit depends upon the TSD calculations for trucks and railcars which are based on AP-42, Chapter 5.2. In AP-42, EPA clearly states that the formula used in the TSD App. A, p. 9, has a probable error rate of +/- 30%. Potential to emit must be based on the maximum emissions. Thus, the TSD should account for the 30% error rate by assuming that the emission factor is 30% higher than the factor resulting from the AP-42 equation. Using an emission factor of 7.46 lbs/kgal, potential to emit VOC after the given 98% control is 5.55 tpy.

The revised calculation in the preceding paragraph reduces VOC loading losses by a 98% control efficiency, consistent with the TSD calculation. TSD, App. A, p. 11. AP-42, however, clearly states that this control efficiency is too high.

> Control efficiencies for the recovery units range from 90 to over 99 percent, depending on both the nature of the vapors and the type of control equipment used. However, only 70 to 90 percent of the displaced vapors reach the control device, because of leakage from both the tank truck and collection system. The collection efficiency should be assumed to be 90 percent for tanker trucks required to pass an annual leak test. Otherwise, 70 percent should be assumed. (AP-42, Chapter 5.2, p. 5.2-6)

The draft Permit does not require the trucks that will be used at the Ceres facility to pass an annual leak test so a 70% control efficiency should be used. In other words, the flare itself may be able to reduce by 98% the VOCs that reach it, but 100% of VOC emissions from loading losess will not reach the flare. Even using the maximum control efficiency in AP-42 of 90% increases controlled VOC emissions from truck loading to 27.77 tpy. This single change increases PTE for VOCs, consistent with all limits in the draft permit, to 109.27 tpy, which is above major source thresholds. Using the AP-42 recommended 70% control efficiency increases controlled VOC emissions from truck loading by a factor of 15, to 83.32 tpy, and increases facility wide PTE to over 163 tpy. Even ignoring the fact that the emission factor must be corrected by 30% from 5.61 lbs/kgal to 7.46 lbs/kgal, if IDEM assumes a more appropriate control efficiency of 90%, PTE still increases beyond major source thresholds. This change also results in increased HAP PTE because the PTE calculation for HAPs is keyed to the HAP fraction of estimated controlled VOC emissions. For example, the PTE of Carbon Disulfide increases from 8.35E-05 to 1.66E-03; therefore, total limited PTE of HAP after control increases from 0.24 tpy to 4.85 tpy.

(b) The draft permit and TSD also incorrectly calculate VOCs from equipment leaks. The permit limits VOC emissions from these components using the New Source Performance Standards leak detection and repair provisions in 40 CFR § 60, Subpart VV. Compliance with 40 CFR § 60, Subpart VV relies in part on measuring VOC leaks using EPA Method 21 using a portable hydrocarbon detection instrument. The most commonly used instruments, a flame ionization detector ("FID") or a photoionization detector ("PID") significantly underestimate the types of oxygenated organics that are present in VOC emissions from ethanol plants.[6] Thus the draft permit does not effectively limit VOC emissions from equipment leaks.

(c) The application and TSD also completely ignore VOC emissions from evaporation of disconnection spillages from the ethanol loading rack. Other agency engineering analyses comparable to IDEM's TSD for ethanol facilities include VOC emissions during

[6] U.S. Environmental Protection Agency, Response Factors of VOC Calibrated with Methane for Selected Organic Chemicals, Report P881-13619, January .1981.

disconnection spillages in their PTE calculations.[7] IDEM and the applicant have provided no justification for ignoring this source of VOCs for this facility.

(d) An ethanol facility has many sources of fugitive VOC emissions. These include the wet cake storage pile, the DDGS storage pile, the mash screen vent, the process building exhaust fan, treating cooling tower recirculating water, and wastewater treatment. The VOC emissions from some of these sources are high. Other facilities require these emissions to be vented to the thermal oxidizer. The draft permit should be modified to require VOC testing of all potential fugitive sources, any significant VOC sources should be controlled by venting to the thermal oxidizer, and fugitive VOC emissions should be included in the source-wide inventory to demonstrate that emission remain below major source thresholds.

(e) The facility will receive 3,723,000 gallons of denaturant, which is gasoline, per year. However, the PTE does not consider VOC emissions from unloading loss and evaporation of disconnection spills from this gasoline. The unloading losses from gasoline are uncontrolled. The TSD must quantify these losses and consider them in the facility's PTE.

Response to Comment 4:

The trucks receiving ethanol from Ceres are managed and owned by different companies. These trucks are conservatively assumed to have carried gasoline prior to filling with denatured ethanol; therefore, pursuant to 326 IAC 8-4-9, the trucks dispensing gasoline and being loaded with denatured ethanol are required to have an annual pressure decay or leak test. Additionally, the loadout flares are required to operate when the loading racks are in operation; as such, there is a requirement in the permit that does not allow for the use of vapor balancing services during ethanol loading. Furthermore, according to manufacturing specifications, the flares are expected to achieve 100% capture efficiency.

IDEM, OAQ disagrees with the commenter that the VOCs from equipment leaks were calculated incorrectly. EPA has established a Leak, Detection and Repair program (LDAR) pursuant to 40 CFR 60, Subpart VV to control VOC emissions and IDEM, OAQ believes the rule provides a reasonable approach to estimate VOC emissions from leaks.

As shown in the summary of Appendix A, IDEM, OAQ provides for a safety factor of 1 ton per year of VOC emissions (listed under "other insignificant activities"). IDEM, OAQ feels it is reasonable to consider VOC emissions from evaporation of disconnection spillages from the two ethanol loading racks as part of these "other insignificant activities"; therefore, these emissions are accounted for in the sourcewide potential to emit. Furthermore, Ceres is capable of producing both DDGS and WDGS; however, the emissions from the DDGS production are considered to be the worst case scenario given that most of the VOCs in the WDGS are driven off in the drying process. Therefore, the PTE of the wet cake storage is not included in the PTE for the entire source. This is consistent with other similar permitted facilities that have provided emission estimates for wet cake storage.

The sourcewide PTE does consider VOC emissions from the unloading losses of Tank 808; the emissions for loading gasoline (RVP-10) into the gasoline tank are accounted for in the calculations provided by the applicant using EPA TANKS 4.0 software. Upon further review, IDEM, OAQ requested the source revise their tanks emission calculations provided in the application for Tanks 801A, 801B, 803, and 808. The application shows emissions based on the use of a lower turnover figure (reflecting the anticipated actual throughput for this plant) rather than the permitted maximum (74 MMgal/yr). Updated emission estimates of the potential to emit VOC from all tanks (revised upwards to 7.76 tons per year) are provided in Appendix A of the TSD Addendum. Tank 808 is estimated to emit 1.65 tons VOC per year. Tank 808 emission

[7] See e.g. San Joaquin Valley Air Pollution Control District, Authority to Construct - Application Review, 60,000,000 Gallon/Year Ethanol Production Facility, Pacific Ethanol Stockton, LLC, Application Nos. N-7365-1-0 through N-7365-28-0, Project No. 1054197, October 10, 2006.

estimates are based on 67 turnovers per year which is approximately 3,651,500 gallons of gasoline per year.

Comment 5:

The commenter stated that HAP emissions may exceed the major source threshold for the following reasons:

(a) The calculations exclude HAP emissions from some sources, including the cooling tower.

(b) The HAP emissions from the boilers and DDGS dryers do not include all HAPs that are emitted during natural gas firing that are listed in AP-42, Table 1.4-3 and 1.4-4. The commenter is unable to determine if the TSD calculations for HAP emissions from the boilers when firing No. 2 fuel oil or biodiesel are correct because the references given do not correspond to the necessary information. The TSD indicates that emissions factors used to estimate HAPs from the Boilers are from AP-42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98. Those tables do not provide emission factors for HAPs for boilers, however. Rather, those tables contain emission factors for criteria pollutants. It appears that the HAP emission factors in the TSD were taken from Table 1.3-10, Emission Factors for Trace Elements from Distillate Fuel Oil Combustion Sources. This data is rated "E," the lowest AP-42 emission factor rating, indicating that the factors do not represent well the actual emissions to be expected when firing this fuel. The applicant should be required to provide data from similar sources to corroborate the assumptions in the PTE calculation.

(c) The HAP control efficiencies assumed for the thermal oxidizer serving the DDGS dryers (90%) is high. In response to a similar comment on Premier Ethanol, IDEM argued that HAP emissions in that case were based on lower control efficiencies, only 50% for the dryers and cooling. If only 50% control was assumed for the DDGS dryers and cooling system proposed for Ceres, the acetaldehyde emissions would be 30.15 tpy, exceeding the major source threshold.

(d) The HAP emissions from ethanol loading losing are underestimated. Because the HAP PTE is factored from the VOC emissions from those processes, which are significantly underestimated, HAP emissions are much higher as well.

Response to Comment 5:

Negligible HAP emissions are expected from the cooling tower. IDEM, OAQ has corrected the typographical error in Appendix A regarding the AP-42 HAP emission factor reference for the boilers; these HAP emission factors were taken from AP-42, Table 1.3-10 (SCC 1-03-005-01/02/03) Supplement E 9/98. The HAP emissions from the natural gas combustion for the boilers are based on the five highest organic and metal HAPs emission factors identified in AP-42. HAP emissions from the remaining HAPs in AP-42 are expected to be minimal. The HAP emissions for the distillate oil combustion are based on the eight highest metal HAP emission factors identified in AP-42 (no data is available in AP-42 for organic HAPs when combusting distillate oil).

The Ceres facility is designed differently than the Premier facility that the commenter discusses above. The dryers and coolers located at the Ceres facility will be designed with two (2) EcoDry systems which are a direct drying process that uses a closed steam loop with process-integrated thermal oxidation. The dryers located at the Premier facility are controlled by a thermal oxidizer. Acetaldehyde emissions from the dryers at the Premier facility were conservatively assumed to be controlled at a 90% level by a thermal oxidizer (and not 50% as stated by the commenter above). IDEM, OAQ believes that the 90% level of control from the DDGS dryers and cooling system proposed for Ceres is not unreasonable because of the thermal oxidation that takes place within the EcoDry systems. The HAP emission factors used in the calculations were provided by the source and are based on controlled emissions. The Permittee will perform stack tests to verify the acetaldehyde emission factor (the expected largest emitting HAP for this type of

process); therefore total HAP emissions from the DDGS dryers and cooling system after control have not been revised. The Permittee is required to test the two EcoDry stacks to confirm compliance with the Acetaldehyde emission limits in the permit of 0.69 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). Compliance with these limits will ensure that the source remains a minor source of HAPs.

Please see the response to comment 4 regarding VOC (and HAP) emissions from loadout operations.

No changes were made to the permit as the result of this comment.

Comment 6:

The commenter stated that the draft permit does not limit SOx emissions to below the major source threshold for the following reasons:

(a) The TSD calculates the Sulfur Dioxide (SO_2) emissions as 90.6 tpy. However, this calculation does not include any SO_2 from "insignificant activities." Insignificant activities are defined in the permit application as having emissions of less than 25 lb/day. 25 lb/day translates into 4.6 tpy. The addition of the 4.6 tpy brings the total PTE to 95.5 tpy.

(b) The TSD includes SO_2 emissions from the DDGS dryer and cooling system as "negligible." Many denatured ethanol/DDGS facilities use Sulfuric Acid to control the Ph of the distiller's grain and solubles. When the DDGS is processed through the dryer, that Sulfuric Acid is combusted in the RTO and converted to SO_2. The TSD calculates SO_2 emissions from the DDGS drying and cooling system based on an SO_2 emission factor from AP-42. The AP-42 SO_2 emission factor is based only on the sulfur content of the fuel. Thus, this emission factor does not account for increased SO_2 due to Sulfuric Acid combustion. The draft permit and TSD completely ignore this source of potential emissions. Because total emissions are only 4.5 tpy less than the major source threshold, SO_2 emissions from this source could result in Ceres exceeding the major source threshold. IDEM and the public are unable to ensure that PTE does not exceed these thresholds without information necessary to calculate the impact of Sulfuric Acid treatment on SO_2 emissions. Either the TSD must be revised to include a calculation of the SO_2 emissions attributable to this process, or the draft permit must be revised to include a prohibition on the use of Sulfuric Acid in DDGS processing.

Response to Comment 6:

IDEM, OAQ disagrees that the SO2 sourcewide emissions should include an additional 4.6 tons per year. No SO2 emitting activity has been identified under this category for Ceres. This category includes other activities that are "not regulated by a NESHAP, with PM10, NOx, and SO2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs".

The Permittee will perform stack tests to verify the SO2 emission factor used for the DDGS dryers and cooling system; therefore total SO2 emissions from the DDGS dryers and cooling system after control have not been revised. The Permittee is required to test the two EcoDry stacks to confirm compliance with the SO2 emission limits in the permit of 0.26 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). Compliance with these limits will ensure that the source remains a minor source of SO2.

Although the emissions from all of Ceres insignificant activities have been accounted for in Appendix A, IDEM, OAQ has revised the permit to identify all of the insignificant activities provided in the application.

The following changes have been made to the permit as a result of this comment:

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

This stationary source also includes the following insignificant activities:

(a) Noncontact cooling tower system, identified as CT-1401, with natural draft not regulated under a NESHAP.

(b) Replacement or repair of bags in baghouses and filters in other air filtration equipment.

(c) Paved roads and parking lots with public access. [326 IAC 6-4]

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

(e) ~~Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations.~~ **Closed loop heating and cooling systems.**

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

(g) Heat exchanger cleaning and repair.

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

(i) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.

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

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

~~(f)~~**(l)** Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) gasoline tank, identified as Tank 808, approved for construction in 2007, storing petroleum material with a vapor pressure equivalent to or less than the vapor pressure of 13 RVP gasoline, with a maximum capacity of 54,500 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(2) Three (3) denatured storage tanks, identified as Tank 810A, Tank 810B, and Tank 810C, approved for construction in 2007, each with a maximum capacity of 700,000 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(3) Two (2) ethanol storage tanks, identified as Tank 801A and Tank 801B, approved for construction in 2007, each with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(4) One (1) ethanol recycle product tank, identified as Tank 803, approved for construction in 2007, with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(5) One (1) syrup tank, identified as TK-724, approved for construction in 2007.

(6) One (1) process water tank, identified as TK-1201, approved for construction in 2007.

(7) One (1) whole stillage tank, identified as TK-601, approved for construction in 2007.

SECTION D.6 FACILITY OPERATION CONDITIONS – Storage Tanks

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

Insignificant Activities

~~(f)~~**(l)** Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) gasoline tank, identified as Tank 808, approved for construction in 2007, storing petroleum material with a vapor pressure equivalent to or less than the vapor pressure of 13 RVP gasoline, with a maximum capacity of 54,500 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

...

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

Comment 7:

The commenter stated that the draft permit does not limit NOx emissions to below the major source threshold for the following reasons:

(a) Emission sources that are commonly found at ethanol facilities were not included in the TSD analysis or draft permit limits. These include a backup generator and/or emergency fire equipment, which could be a source of pollutants contributing to a total PTE above major source thresholds. Facilities that depend on the continuous availability of electricity for their processes, such as the Ceres facility, typically install a diesel- or propane-fueled backup generator, to ensure continuous operation when the facility experiences a loss of electrical service from the public utility company. Typically, a diesel-fueled backup generator would also be used to supply electricity to a fire water pump during an emergency. Other ethanol facilities have included emergency equipment in the FESOP application, and that equipment has typically accounted for several tons of NOx per

year.[8] Any backup generator on site must be properly permitted and included in the draft permit, and its potential emissions must be included in PTE.

(b) The Permit does not limit the fuel for DDGS dryers to natural gas as an enforceable operational limitation. The Permit fails, even, to require that the facility report when it combusts an alternative fuel in the DDGS dryers. Propane is a common back up fuel for combustion sources. If propane were fired in the grain dryer, a significant increase in NOx emissions would occur. This increase would likely not be detected because emissions from the grain dryer are not monitored and because the Permit does not restrict the type of fuel that can be burned. Because the Permit does not address alternative fuels, it also fails to require operational changes to the burners to minimize emissions if the units burn propane, or require that the type and amount of fuels other than natural gas combusted be recorded and reported.

Response to Comment 7:

Ceres is not proposing to construct any fuel fired emergency generators or fire pumps. All fire pumps will be electric. Furthermore, the permit authorizes Ceres to construct two (2) natural gas fired DDGS dryers; therefore, Ceres is not allowed to combust an alternative fuel in the DDGS dryers. No changes have been made to the permit as a result of this comment.

Comment 8:

The commenter stated that the draft permit does not contain all required emission limits and compliance provisions to qualify as a FESOP and the draft permit lacks emission limits for certain sources to limit the potential to emit to below major source thresholds:

(a) Combustion of ethanol vapors in the flare will generate VOC, NOx, CO, PM, PM10, and HAP emissions. The draft permit restricts NOx, CO emissions and purports to limit VOC but fails to limit HAPs, PM or PM10 emissions at all. The pollutants PM and PM10 are combustion byproducts. The magnitude of these emissions depends upon the design of the flares. The PTE calculations did not include PM and PM10 emissions from the flares. These emissions should be calculated, included in potential to emit, and a limit included in the Permit.

(b) Paved roads within the facility are a source of PM and PM10 emissions. The draft permit does not limit emissions from these roads. Thus, the draft permit does not limit the potential to emit PM and PM10 from paved haul roads. The permit must contain emission limits based on the PTE used in the TSD.

(c) The 7.9 tpy PM/PM10 PTE for the Cooling Tower is based on a 45,000 gal/min water circulation flow rate, a drift loss of 0.005%, and a total dissolved solids (TDS) level of 2500 ppm. However, the draft permit does not have any requirements for the cooling tower. In order for the 7.9 tpy PTE for the cooling tower to be enforceable as a practical matter, the permit must limit the flow rate to 45,000 gallons per minute, the drift loss to 0.005%, and the TDS to 2500 ppm. The permit must also include monitoring and reporting for these parameters or direct testing and monitoring of the PM and PM10 emissions from the cooling tower.

Response to Comment 8:

IDEM, OAQ has determined that it is appropriate to require the flare to have smokeless design if the applicant indicates there are no particulate emissions from the flare as this types of flare will emit negligible PM/PM10 emissions. IDEM, OAQ also believes that the annual loadout limit of ethanol is an appropriate surrogate to limit VOC and HAP emissions from the loading racks. The source is required to maintain monthly records of the total amount of denatured ethanol loaded

[8] See e.g. Ultimate Ethanol, FESOP No. 095-23482-00127; Abengoa Bioenergy, FESOP No. 129-23484-00050; Cardinal Ethanol, FESOP No. 135-23226-00033.

out from the ethanol loading racks. The VOC and HAP calculations are based on a worst case assumption that all denatured ethanol is loaded to trucks.

An emission source which qualifies as a major source under Part 70 rules, and hence needs a Title V permit, may voluntarily accept federally enforceable limits on air pollutant emissions to obtain a FESOP rather than the Title V permit. The federally enforceable limits in a FESOP are derived from sourcewide emissions calculations that account for the maximum potential emissions from each emission unit at the source. Certain operations have minimal PTE; therefore, it is sometimes unnecessary to limit and/or require monitoring for these operations. However, any emissions from an unlimited emission unit are still counted in their entirety towards the sourcewide emissions when determining the permitting level. Therefore, concerning the comments regarding limiting emissions from paved roads and other requirements for the cooling tower, IDEM, OAQ believes it is unnecessary to limit emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. When a PTE is limited, the Permittee is subject to record keeping and reporting requirements in order to demonstrate compliance with those limits. Collectively, the limited PTE of certain activities along with the unlimited PTE of the remaining activities located at the source must be below major thresholds to be considered a FESOP.

The following change has been made as a result of this comment:

D.5.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the ethanol loading racks:

(a) The total denatured ethanol load-out from the ethanol loading system shall not exceed 74,460,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The Permittee shall use a **smokeless** flare identified as Flare to control the emissions from the ethanol loading system.

...

Comment 9:

Several operational limits are expressed in terms of units of input or output measured "per twelve (12) consecutive month period with compliance determined at the end of each month," including grain receiving, DDGS loadout, ethanol loadout, and natural gas to the boilers. The commenter stated that the supporting compliance calculation sheets indicate that the intent of this language is to add the current month's input or output to that of the previous 11 months. This does not properly limit emissions during the first 11 months of operation. A separate limit, based on a monthly average, should be set for the first 12 months of operation.

Response to Comment 9:

Since FESOP limits are based on annual limits, if the source emitted its entire allowed amount of emissions in the first six months, then the source would not be able to operate for the following six months because the source would exceed the allowable emissions based on a rolling twelve month total. Therefore, no separate limits are needed for the first year of operation. No changes were made as a result of this comment.

Comment 10:

The draft permit does not recognize startup, shutdown, and malfunction. The TSD does not disclose any analysis or design to minimize the frequency of such events and to minimize such excess emissions.

The potential to emit calculations do not appear to have included startup and shutdown emissions, which by themselves could be high enough to exceed the major source threshold. For example, the TSD indicates CO emissions of 87.2 tpy, and VOC emissions of 85.7. Nothing in the draft permit or supporting material indicates that the potential to emit calculation or permit limits account for excess emissions that occur during periods of startup, shutdown or malfunction, nor explains how those periods affect emissions at the plant.

For example, as with many large pieces of equipment, the Ceres facility contains equipment that will produce more of certain pollutants when they are starting up or shutting down than when they are operating at a steady state. The combustion equipment, including the DDGS dryers, boilers and thermal oxidizers will generate more CO and VOC emissions during startup and shutdown because CO will not be fully oxidized and the VOCs will not be completely combusted until the equipment reaches steady state of operation. This equipment operates intermittently, and the boilers, in particular, frequently operate at low loads that generate more CO and VOC emissions than at other times.

The draft permit fails to place any limits on the increased CO and VOC emission levels that may result during periods of startup and shutdown and does not appear to consider those excess emissions in calculating the potential to emit. Without limits on increased emissions during startup and shutdown, the Ceres facility may emit pollutants in an amount over the major source threshold.

Thus, the draft permit should be revised to address the startup and shutdown emissions. Without such revision, it is likely that CO and VOC emissions will exceed both the individual unit permit limits and major source thresholds.

Response to Comment 10:

IDEM, OAQ does not feel that it is necessary to limit emissions from startup, shutdown, and malfunction. The combustion equipment for Ceres is much smaller than a typical large utility boiler. The emissions during startup and shutdown are expected to be minimal and the duration of startup and shutdown are also expected to be minimal. Furthermore, the controls are required at all times the DDGS dryers are in operation and emission calculations for the boilers are based on continuous operation (8760 hours per year); therefore, the calculations do not account for times of shutdown (when the boilers are not operating) and may overestimate emissions. Nevertheless, the sourcewide emissions are still calculated to be below FESOP thresholds even with these conservative assumptions. No changes were made as a result of this comment.

Comment 11:

The commenter stated that the proposed testing and monitoring is not adequate to ensure continuous compliance because of the following reasons:

(a) The method of demonstrating compliance with the source-specific emission limits is by an initial stack test, repeated once every 5 years or longer (testing is only required once every 15 years for Boilers 1-3), and various parametric testing through indicator operating parameters (e.g., baghouse pressure drop, scrubber pressure drop and flow rate, thermal oxidizer temperature, presence of a pilot flame in the flare). The draft permit does not require the demonstration of any relationship between the various parametric indicators and the relevant emission limits, nor does it state that a violation of the indicator constitutes a per se violation of the pollutant of interest. No testing at all is required for some emission sources, including grain receiving fugitives, DDGS load out fugitives, cooling tower, and paved roads. This missing, or minimal and infrequent testing does not satisfy the obligation for testing sufficient to "evaluate continuous compliance" nor does it allow IDEM, U.S. EPA or the public to ensure compliance with the Permit limits. It is feasible to directly and continuously monitor emissions from the thermal oxidizers and the wet scrubbers. The draft permit does not require any continuous emission monitors. It is also feasible to conduct more frequent stack tests. Annual or more frequent testing is feasible, is commonly required for similar facilities, and should be required here. Finally,

annual fugitive emission inventories for PM/PM10 and VOCs are required elsewhere and should be required here. Thus, the draft permit should be modified to require more frequent direct emission testing.

(b) The TSD identifies five sources of HAPs at Ceres. However, the draft permit limits and tests only Acetaldehyde from two sources and total HAPs from one source. Acetaldehyde is not necessarily the major HAP. Further, the facility will emit other HAPs, including methanol, acrolein, and propionaldehyde.[9] Also, other emission units will emit HAPs, including the ethanol loading rack, equipment leaks, and other fugitive sources. Control and testing of only two HAPs at only two emission points renders the total HAPs cap of 25 tpy unenforceable as a practical matter and in violation of 326 IAC 2-8-4(3). The draft must include testing for all HAPs emissions from all sources that emit HAPs including the fermentation process, the RTO stack, the DDGS cooler, ethanol loadout and equipment subject to leaks.

(c) The draft permit does not identify any of the test methods that will be used to determine compliance with emission limits. Instead, such identification is deferred to a future protocol that will not be subject to public review. All test methods must be disclosed in the Permit to qualify for a FESOP.

(d) The method that will be used to measure VOCs and HAPs is critical to disclose during public comments to assure that the compliance test method is consistent with the test method used to develop the VOC and HAP emission limits in the first place and to assure that the method is properly applied. Compliance, for example, would not be demonstrated if the VOC limits were developed based on testing using Method 25a reported as carbon, and compliance was determined with Method 18. The method used to scale measurements to the Permit limit basis is critical in determining compliance and should be disclosed.[10]

(e) Numerous factors indicate that a continuous direct measurement, in the form of a continuous emissions monitoring system ("CEMS") is necessary for at least NOx, SOx, and CO emissions from S-EcoDry1 and S-EcoDry2, which includes emissions from the dryers, and RT01 Stack, which includes emissions from fermentation and distillation. To begin with, the PTE calculated in the TSD, even if it were correct, which it is not, is very close to the major source threshold. The CO PTE is 12.8 percent below the major source threshold, the NOx PTE is 6.3 percent below the major source threshold and SO2 is 9.4 percent. With this limited margin between the calculated amount and the major source thresholds, the most reliable and stringent monitoring possible is called for. There can be no doubt that a CEMS for NOx, SOx, and CO is possible for S-EcoDry1, S-EcoDry2 and the RT01 Stack. A CEMS is important because, as explained above, combustion sources can have highly variable emissions during different levels of operation. Only a CEMS will accurately reflect these actual emissions. Only with a CEMS will IDEM, US EPA and the public be able to know the actual emissions from this source. This knowledge is required to ensure continuous compliance with the permit limits.

Response to Comment 11:

IDEM, OAQ requires testing for the major emission points located at the source. The testing conditions in the permit specify that the Permittee will use test methods approved by the Commissioner. The specific test methods and testing environment will be specified in the test protocol submitted by the Permittee as required in Condition C.9 (Performance Testing) and will be evaluated by IDEM, OAQ prior to the stack test. The most up to date EPA approved test method will be required to be used; therefore, the test method is not specified in the permit. The boilers Ceres proposes to install are subject to the requirements of the NSPS, Subpart Dc;

[9] D. Brady and G.C. Pratt, Volatile Organic Compound Emissions from Dry Mill Ethanol Production, Minnesota Pollution Control Agency, Environmental Bulletin, no. 8, August 2006.
[10] E-mail Erik Hardin, U.S. EPA, to Richard Edgehill, San Joaquin Valley Air Pollution Control District, Re: Testing oxygenated organics, January 14, 2004.

however there are no State or Federal regulations that require continuous monitoring of emissions from these boilers or the thermal oxidizers.

As stated in the permit, a parameter reading that is outside the determined range is not a deviation from the permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances would be considered a deviation from the permit. The parameter reading does not indicate a violation; however, monitoring the parameter ensures the equipment is operating normally.

Furthermore, IDEM believes that testing every five (5) years is sufficient for this source considering the stability of the operation and control devices. There are other types of operations that are not associated with an ethanol production plant that do require more frequent testing such as municipal waste combustors, sulfuric acid plants, and secondary lead smelters. However for the types of operations this source is proposing to construct, five (5) year testing along with frequent monitoring of the control equipment (to ensure the controls are operating correctly) is sufficient. IDEM also has the authority to require additional testing at any time if monitoring or other information indicates that a change may have occurred in the operation of the process and/or control device.

The source has provided emissions estimates consistent with other ethanol plants that show Acetaldehyde as the major HAP emitted, and IDEM, OAQ believes that Acetaldehyde is the HAP that is emitted at the highest rate at dry-mill ethanol plants. Additionally, IDEM, OAQ believes that the current required HAP testing for this source is adequate because the vast majority of Acetaldehyde is emitted from the fermentation and distillation processes, and the dryer and cooling systems, all of which require stack testing. IDEM, OAQ acknowledges that certain operations will emit other types of HAPs; yet, it is unnecessary to limit these operations because HAP emissions from an unlimited emission unit are counted in their entirety towards the sourcewide emissions when determining the permitting level. Therefore, IDEM, OAQ believes it is unnecessary to limit or test other HAPs, including methanol, formaldehyde, acrolein, and propionaldehyde at this source. No changes were made as a result of this comment.

Comment 12:

The draft permit requires vague visible emission readings, parametric monitoring, and broken or failed bag detection. These methods fail to assure compliance with the PM and PM10 emission limits, however, rendering the limits unenforceable for the following reasons:

(a) The opacity readings are taken only once a day, during daylight, and are only classified as to "normal" or "abnormal." "Abnormal" is defined with reference to prevailing conditions 80% of the time the process is in operation. If an exceedance of this subjective standard is observed, Ceres must undertake the vague abatement procedures in Permit Condition C. This standard does not assure compliance with the mass emission limits in the draft permit.

(b) The permit requires parametric monitoring. The proposed differential pressure monitoring of individual bag houses has been shown not to be an adequate indicator of bag leaks. The proposed method would not detect individual bag leaks, which could cause exceedances of the hourly emission limit. Further, the draft permit does not specify where pressure would be measured, but appears to only require differential pressure measurements across the entire baghouse, rather than individual bag house compartments. This would not help isolate bag leaks.

Response to Comment 12:

The visible emission notations are used as a surrogate to ensure compliance with 326 IAC 5-1 and 326 IAC 6, without the requirement to have a person on site trained in opacity measurement. This requirement is designed as a trigger that the source perform some corrective action on the facility if visible emissions are abnormal, which helps ensure continuous compliance with emission limitations. As the visible emissions condition states, 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. This training does not need to include the training to become a certified opacity reader, nor does the training need to be done by a certified opacity reader. The purpose of specifying that a trained employee perform the visible emissions notations is to make sure that the employee would know the difference between "normal" and "abnormal" visible emissions from the particular process.

As stated in Response to Comment 3, the Permittee is required to take reasonable response steps when a compliance monitoring parameter is determined to be out of range or abnormal under Condition C.15 - Response to Excursions or Exceedances. This condition ensures that the control equipment is returned to proper operation as soon as practicable, while still allowing the Permittee the flexibility to respond to situations that were not anticipated. No changes were made as a result of this comment.

Comment 13:

The draft permit does not contain any monitoring (e.g., of silt content, number and type of trucks, type and frequency of dust control measures), recordkeeping, and reporting to assure that PM/PM10 emissions from roads remain below the levels calculated in the TSD, as required by many states with a long history of regulating ethanol plants, e.g., Minnesota, Nebraska.[11] The draft permit must contain this monitoring and reporting.

Response to Comment 13:

Pursuant to 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). IDEM, OAQ has included a requirement for the source to keep records of their sweeping (in addition to the amount of grain received and DDGS shipped); and at anytime, IDEM, OAQ reserves the right to require more frequent sweeping if IDEM identifies a problem. Furthermore, IDEM, OAQ believes it is unnecessary to limit all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. See response to comment 8 for further elaboration on this point.

No changes were made to the permit as the result of this comment.

Comment 14:

The commenter stated that the VOC emission limits set forth in the draft permit for fermentation, distillation, DDGS drying, and ethanol loadout are not consistent with the definition of BACT and do not constitute all practical and economically feasible methods to control air pollution because of the following reasons:

(a) The applicant and the permit reviewer did not consider the use of a cellulosic ethanol production process, rather than the current production process, in the BACT analysis. Thus, the BACT analysis is incomplete and must be remanded back to the applicant. Broin, who is a project proponent for another ethanol plant proposed for Indiana, says cellulosic ethanol will create commercialization results that include 11 percent more ethanol from a bushel of corn and 27 percent more ethanol from an acre of corn while using 83 percent less energy than needed to operate a corn to ethanol plant.[12] Thus, on a factored basis, emissions from the natural gas sources would be 83 percent less and emissions from other sources would be 11 percent less using a cellulosic process. Also, the environmental impacts of this process would be less because it produces 27 percent more ethanol per acre of corn.

[11] See, for example: ADM Corn Processing, Columbus, Nebraska, Truck Traffic Fugitive Control Strategy and Monitoring Plan. ADM Haul Roads, January 10, 2006.
[12] See http://thefraserdomain.typepad.com/energy/2006/11/broin_companies.html

(b) Fermentation and distillation process emissions vent to a wet scrubber with thermal oxidation. The TSD concluded that BACT for these processes is 98% VOC control or an outlet concentration of 20 ppmv. 98% is not BACT for this process. 99% VOC control is BACT for these processes. Premier Ethanol, LLC., was issued a permit in September, 2006, requiring 99% control efficiency as BACT. IDEM seeks to backpedal in the Ceres permit, but BACT is the maximum reduction achievable, and the Premier Ethanol permit demonstrates that 99% control of VOCs from fermentation are achievable. IDEM makes the comment that "BACT limitations do not necessarily need to reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based," but vendor guarantees are only one aspect of what is achievable. Due to the fact that another recently permitted facility similar to this facility has been permitted at a higher control efficiency as BACT, IDEM must offer more than one statement about its discretion to support the backsliding in this permit. Since no further explanation or analysis is provided, the draft permit must be revised to include 99% VOC control as BACT.

(c) The language in Condition D.2.5(b), following the "or", gives the source the option of achieving either 98% VOC control "or" a VOC outlet concentration of 10 ppmv. This effectively guts the 98% requirement because wet scrubbers can achieve VOC concentrations less than 10 ppmv.[13] The phrase "or the VOC outlet concentration shall not exceed 10 ppmv" should be removed or changed to read "or the lowest emission rate in ppmv based on the maximum degree of reduction that is achievable" to comply with BACT, which is an emission limit based on the maximum degree of reduction that is achievable.

(d) The TSD does not explain why the proposed wet scrubber with thermal oxidation cannot be designed to achieve 99% (or greater) control when VOC inlet concentrations are low. IDEM has claimed in other ethanol plant cases that a control efficiency of 99% may not be achievable in practice at extremely low VOC concentrations. However, no support has ever been offered for this claim. Further, the stack tests that the commenter has reviewed indicated that outlet VOC concentrations are routinely less than 10 ppmv when achieving 99% VOC control. The TSD does not explain how the 10 ppmv value was determined and whether 10 ppmv represents the lowest VOC concentration that is achievable using any wet scrubber with thermal oxidation or whether this is just the limit for one particular vendor's wet scrubber with thermal oxidation, based on the applicant's specific request in a request for proposal based on financial considerations.

(e) The VOC concentration limit is not enforceable as a practical matter because the draft permit does not disclose the conditions under which the VOC concentration is stipulated. The Commenter stated that the draft permit must be revised to state the following additional information if a concentration limit is retained: (1) oxygen content; (2) temperature and pressure; (3) averaging time; (4) test methods; and (5) molecular basis, e.g., reported as carbon, ethanol, methane, etc.

(f) The commenter has identified other ethanol plants that achieved higher VOC control efficiencies for DDGS dryers using thermal oxidizers (Michigan Ethanol – 99.6%, Agri-Energy, MN – 99.59%, New Energy Corp – 98.8%, 99.2%). IDEM does not explain why higher VOC control efficiencies for similar sources do not establish BACT for the Ceres facility. BACT is an emission limit based on the maximum degree of reduction that is achievable. The commenter stated that stack tests for the aforementioned facilities indicate that a VOC control efficiency higher than 98% is achievable, has been achieved, and thus should be required here as BACT for VOC emissions from the DDGS dryers.

Response to Comment 14:

[13] Interpoll Laboratories, Results of the March 3, 2006 Air Emission Compliance Testing at the Verasun Fort Dodge Facility in Fort Dodge, Iowa, April 13, 2006 (2.838 ppmw and 4.583 ppmd). See also other recent stack tests including the July 2006 source test at Horizon Ethanol, Jewell, Iowa (3.8 ppmvd).

IDEM, OAQ does not consider the BACT requirement as a means to redefine the basic design of the source, or change the fundamental scope of the project when considering available control technologies. Ceres has applied to construct a dry mill, corn-based ethanol production facility. Therefore, the construction and operation of a cellulose-based ethanol production facility was not considered as an available control technology as part of the BACT analysis.

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. This practice has been upheld by the EPA Environmental Appeals Board. See In re Pennsauken County, New Jersey Resource Recovery Facility, PSD Appeal No. 88-8, at 5 (Adm'r, Apr. 20, 1989) (Order Denying Review). Also see In re Masonite Corporation, PSD Appeal No. 94-1, at 560 (Adm'r, Nov. 1, 1994) (Order Denying Review in Part and Remanding in Part).

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 in conjunction with 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 the 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. Many vendors and manufactures will not guarantee their control equipment to efficiencies of 98% at extremely low VOC concentrations. BACT must be achievable on a consistent basis under normal operational conditions.

The testing requirements conditions in the permit specify that the Permittee will use test methods approved by the Commissioner. The specific test methods and testing environment will be specified in the test protocol submitted by the Permittee as required in Condition C.9 (Performance Testing) and will be evaluated by IDEM, OAQ prior to the stack test. The most up to date EPA approved test method will be required to be used; therefore, the test method is not specified in the permit.

No change has been made to the BACT determination for fermentation, distillation, DDGS drying, and ethanol loadout.

David Jordan (Environmental Resources Management) Comments:

On January 23, 2007, David Jordan of Environmental Resources Management (referred to as the "Commenter") submitted comments on the proposed FESOP. The summary of the comments is as follows (bolded language has been added, the language with a line through it has been deleted):

Comment 1:

The commenter stated that Condition D.2.9 contains a condition that requires VOC, NOx, and CO testing on the wet scrubber/thermal oxidizer. There is a sentence in this condition that reads "PM10 includes filterable and condensable PM10" which doesn't seem to belong, and can probably be removed.

Response to Comment 1:

IDEM, OAQ agrees that the statement "PM10 includes filterable and condensable PM10" should be removed from Condition D.2.9 because this condition does not require PM10 testing.

The following change has been made to the permit as a result of this comment:

D.2.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]

In order to demonstrate compliance with Conditions D.2.4 and D.2.5, the Permittee shall perform VOC (including emission rate, overall destruction efficiency and overall capture efficiency), NOx, CO, and Acetaldehyde testing on the outlet of the wet scrubber and thermal oxidizer control system stack (S-RTO1) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. ~~PM10 includes filterable and condensible PM10.~~ These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Upon further review, IDEM has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted):

1. In order to clarify that the wet scrubber is followed by the RTO when describing the control for the fermentation and distillation processes, the following changes have been made to the permit:

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

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

...

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber**,** ~~and~~ **followed by** a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

...

(f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber**,** ~~and~~ **followed by** a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

...

SECTION D.2 FACILITY OPERATION CONDITIONS – Fermentation and Distillation Process

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

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber**,** ~~and~~ **followed by** a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

...

(f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber**,** ~~and~~ **followed by** a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

...

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

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Review and a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Ceres Holdings, LLC
Source Location:	2800 W 300 N, Fowler, Indiana 47944
County:	Benton
SIC Code:	2869
Operation Permit No.:	F007-23773-00018
Permit Reviewer:	ERG/JR

The Office of Air Quality (OAQ) has reviewed a New Source Review and FESOP application from Ceres Holdings, LLC relating to the construction and operation of an ethanol production plant.

History

Ceres Holdings, LLC submitted an application on October 16, 2006, to IDEM, OAQ applying for a Federally Enforceable State Operating Permit to construct and operate a new ethanol production plant at 2800 W 300 N, Fowler, Indiana 47944.

Permitted Emission Units and Pollution Control Equipment

There are no permitted emission units operating at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

New Emission Units and Pollution Control Equipment

The application includes information relating to the prior approval for the construction and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

(a) One (1) grain receiving area, approved for construction in 2007, receiving a maximum of 730,548 tons of grain per year, consisting of the following:

(1) One (1) truck receiving area identified as T-Rcvg, with a maximum capacity of 20,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-1, and exhausting through stack S-1.

(2) One (1) railcar receiving area, identified as R-Rcvg, with a maximum capacity of 20,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-2, and exhausting through stack S-2.

(b) One (1) internal handling system, approved for construction in 2007, consisting of the following:

(1) One (1) drag conveyor, identified as Conv 1, with a maximum capacity of 30,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-3, and exhausting through stack S-3.

(2) One (1) drag conveyor, identified as Conv 2, with a maximum capacity of 30,000 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-4, and exhausting through stack S-4.

(3) Four (4) silos, identified as Silo 1, Silo 2, Silo 3, and Silo 4, with a total storage capacity of 1,000,000 bushels of corn.

(4) One (1) surge bin, identified as Surge Bin, with a maximum capacity of 3,300 bushels of corn per hour and particulate emissions controlled by a baghouse, identified as DC-5, and exhausting through stack S-5.

(c) Four (4) hammermills, identified as Hammermill A, Hammermill B, Hammermill C, and Hammermill D, approved for construction in 2007, each with a maximum throughput rate of 1100 bushels of corn per hour, controlled by baghouses DC-6A, DC-6B, DC-6C, and DC-6D, and exhausting through stack S-6A, S-6B, S-6C, and S-6D, respectively.

(d) One (1) DDGS loadout operation, approved for construction in 2007 with a maximum throughput rate of 215,319 tons per year, controlled by baghouse DC-7, exhausting to stack S-7.

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber and a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) yeast slurry tank, identified as TK-422.

(2) Six (6) fermenters, identified as TK-401A, TK-401B, TK-401C, TK-401D, TK-401E, and TK-401F

(f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 8,500 gallons of ethanol per hour, controlled by a wet scrubber, identified as Ethanol Absorber and a thermal oxidizer, identified as RTO1, exhausting through stack S-RTO1, and consisting of the following:

(1) One (1) beer well, identified as TK 501.

(2) Three (3) distillation strippers, identified as T507, T516, and T533.

(3) One (1) liquefaction tank, identified as TK-307 .

(4) One (1) Jet Cooker, identified as ED-306.

(5) One (1) nutrient mix tank, identified as TK-419.

(6) One (1) yeast slurry tank, identified as TK-422.

(7) One (1) vent condenser, identified as E-509.

(8) One (1) final condenser, identified as E-520.

(9) One (1) stripper/rectifier, identified as T-533.

(10) Two (2) molecular sieve units, identified as MOL-581A and MOL-581B.

(11) One (1) evaporation system, identified as EV-700

(12) Four (4) stillage centrifuges, identified as CS-604A, CS-604B, CS-604C, and CS-604D.

(13) One (1) centrate receiver, identified as TK-606, and one (1) centrate surge tank, identified as TK-608.

(g) Three (3) boilers capable of burning natural gas, No. 2 fuel oil, or biodiesel, identified as Boiler 1, Boiler 2, and Boiler 3, approved for construction in 2007, each with a maximum heat input rate of 54.5 MMBtu/hr, with emissions exhausting to stacks S-B1, S-B2, and S-B3, respectively.

(h) One (1) DDGS dryer and cooling system, with a maximum throughput rate of 215,319 tons of DDGS per year consisting of the following:

(1) One (1) natural gas fired DDGS dryer, identified as DDGS Dryer 1, approved for construction in 2007, with a maximum heat input rate of 43.5 MMBtu/hr and a maximum throughput rate of 107,660 tons of DDGS per year, with emissions venting through a thermal oxidizer, identified as EcoDry1, and exhausting to stack S-EcoDry1.

(2) One (1) natural gas fired DDGS dryer, identified as DDGS Dryer 2, approved for construction in 2007, with a maximum heat input rate of 43.5 MMBtu/hr and a maximum throughput rate of 107,660 tons of DDGS per year, with emissions venting through a thermal oxidizer, identified as EcoDry2, and exhausting to stack S-EcoDry2.

Note: The basis of the EcoDry system is a direct drying process using a closed steam loop with process-integrated thermal oxidation.

(i) One (1) ethanol loading system, consisting of the following:

(1) One (1) rack for trucks, identified as Ethanol Truck Loadout, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour.

(2) One (1) rack for railcars, identified as Ethanol Rail Loadout, approved for construction in 2007, with a maximum throughput rate of 72,000 gallons per hour.

The truck and rail loading processes are controlled by the enclosed flare, identified as Flare, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausts through stack S-Flare.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) Noncontact cooling tower system, identified as CT-1401, with natural draft not regulated under a NESHAP.

(b) Replacement or repair of bags in baghouses and filters in other air filtration equipment.

(c) Paved roads and parking lots with public access. [326 IAC 6-4]

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

(e) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations.

(f) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less

than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) gasoline tank, identified as Tank 808, approved for construction in 2007, storing petroleum material with a vapor pressure equivalent to or less than the vapor pressure of 13 RVP gasoline, with a maximum capacity of 54,500 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(2) Three (3) denatured storage tanks, identified as Tank 810A, Tank 810B, and Tank 810C, approved for construction in 2007, each with a maximum capacity of 700,000 gallons. [326 IAC 8-4-3] [40 CFR 60, Subpart Kb]

(3) Two (2) ethanol storage tanks, identified as Tank 801A and Tank 801B, approved for construction in 2007, each with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(4) One (1) ethanol recycle product tank, identified as Tank 803, approved for construction in 2007, with a maximum capacity of 54,500 gallons. [40 CFR 60, Subpart Kb]

(5) One (1) syrup tank, identified as TK-724, approved for construction in 2007.

(6) One (1) process water tank, identified as TK-1201, approved for construction in 2007.

(7) One (1) whole stillage tank, identified as TK-601, approved for construction in 2007.

Existing Approvals

The source does not have any existing approvals.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the 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.

An administratively complete FESOP application for the purposes of this review was received on October 16, 2006. Additional information was received on November 27, 2006.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 16). The PTE of storage tanks is 7.0 tons/yr of VOC, which was calculated using EPA TANKS 4.0 software. The emissions calculations for storage tanks were provided by the applicant and have been verified and found to be accurate and correct.

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, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency."

This table reflects the PTE before controls for the new emission units. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential to Emit (tons/yr)
PM	Greater than 100
PM10	Greater than 100
SO_2	Greater than 100
VOC	Greater than 100
CO	Greater than 100
NO_x	Greater than 100

HAPs	Potential to Emit (tons/yr)
Acetaldehyde	78.5
Acrolein	7.3
Formaldehyde	33.8
Hexane	45.4
Methanol	12.5
Other HAPs	Negligible
Total HAPs	Greater than 25

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, SO2, VOC, CO, and NOx are equal to or greater than one hundred (100) tons per year. This source, which would otherwise be subject to the provisions of 326 IAC 2-7, 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 greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is greater than twenty-five (25) tons per year. This source, which would otherwise be subject to the provisions of 326 IAC 2-7, will limit its HAP emissions below the Title V levels.

(c) Fugitive Emissions
Since this type of operation is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of Prevention of Significant Deterioration (PSD) applicability.

Potential to Emit After Issuance

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. Since this source is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate emissions are counted toward determination of PSD applicability and the fugitive emission shall be included in the PTE of the entire source. The table below summarizes the potential to emit, reflecting all limits of the emission units.

	Potential To Emit (tons/year)						
Process/Emission Unit	PM	PM10	SO_2	VOC	CO	NO_x	HAPs
Truck or Rail Receiving (R-Rcvg)*	4.11	4.11	-	-	-	-	-
Straight / Hopper Truck Receiving (T-Rcvg)*	4.11	4.11	-	-	-	-	-
Grain Handling (Conv 1)*	3.02	3.02	-	-	-	-	-
Grain Handling (Conv 2)	6.61	6.61	-	-	-	-	-
Grain Receiving – Fugitive	0.30	0.30	-	-	-	-	-
Surge Bin	6.57	2.16	-	-	-	-	-
Hammermill A	1.62	1.62	-	-	-	-	-
Hammermill B	1.62	1.62	-	-	-	-	-
Hammermill C	1.62	1.62	-	-	-	-	-
Hammermill D	1.62	1.62	-	-	-	-	-
DDGS Loadout	1.41	1.41	-	-	-	-	-
DDGS Handling and Storage – Fugitive	4.81	1.60	-	-	-	-	-
Fermentation and Distillation (RTO1 Stack)	0.08	0.08	0.01	26.8	0.92	0.55	0.40
Boilers (NG or Fuel Oil)**	7.2	7.2	91.0	11.5	39.4	35.8	1.35
DDGS dryer and cooling system (EcoDry1 and EcoDry2)	26.3	26.3	Negligible	17.5	43.8	56.1	11.26
Ethanol loading system	-	-	-	4.17	3.11	1.24	0.24
Paved Roads (Insignificant)	14.6	2.8	-	-	-	-	-
Cooling Tower (Insignificant)	7.9	7.9	-	-	-	-	-
Storage Tanks (Insignificant)	-	-	-	7.0	-	-	-
Equipment Leaks (Insignificant)	-	-	-	17.7	-	-	1.03
Wet Cake Storage***	-	-	-	See Note	-	-	See Note
Other Insignificant Activities	1.0	1.0	-	1.0	-	-	-
Total PTE of the Entire Source	94.5	75.1	90.6	85.7	87.2	93.7	6.4/14.3
Title V Thresholds	NA	100	100	100	100	100	25 for total HAPs; 10 for single HAP

Note: "-" pollutant not emitted by the facility.
* The operating hours for the grain receiving operations and Conveyor #1 shall each not exceed 4,000 hours per twelve (12) consecutive month period with compliance determined at the end of each month.
** The input of natural gas to the boilers is limited to 1432.3 MMCF per twelve (12) consecutive month period. For the purpose of determining compliance with this limit, one gallon of No.2 fuel oil or biodiesel shall be considered equal to 5.77E-4 million cubic feet of natural gas equivalents, based on nitrogen oxide emissions. This usage limit is required to

limit the potential to emit nitrogen oxide emissions from the boilers to less than 35.8 tons per twelve (12) consecutive month period. This usage limit also ensures that SO2 emissions from the boilers are less than 91.0 tons per twelve (12) consecutive month period and CO emissions are less than 39.4 tons per twelve (12) consecutive month period.
*** Emissions from DDGS production are the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.

County Attainment Status

The source is located in Benton County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO_2	Attainment
NO_2	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

Note: On October 25, 2006, the Indiana Air pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.

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

(b) Benton County has been classified as 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. See the State Rule Applicability – Entire Source section

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

Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	94.5
PM10	75.1
SO_2	90.6
VOC	85.7
CO	87.2
NO_x	93.7

This new source is not a PSD major stationary source because no attainment regulated pollutant is emitted at a rate of one hundred (100) tons per year or greater and it is in one of the twenty-eight (28) listed source categories.

Federal Rule Applicability

(a) The three (3) boilers, identified as Boiler 1, Boiler 2, and Boiler 3, each have a maximum heat input capacity greater than 10 MMBtu/hr and less than 100 MMBtu/hr and will be constructed after the June 9, 1989 applicability date. Therefore, these boilers are subject to the New Source Performance Standards for Small Industrial - Commercial - Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40c-48c, Subpart Dc).

Nonapplicable portions of the NSPS will not be included in the permit. Since Boiler 1, Boiler 2, and Boiler 3 are capable of burning natural gas, No. 2 fuel oil, or biodiesel, they are subject to the following portions of 40 CFR 60, Subpart Dc.

(1) 40 CFR 60.40c
(2) 40 CFR 60.41c
(3) 40 CFR 60.42c(d)
(4) 40 CFR 60.42c(g)
(5) 40 CFR 60.42c(h)
(6) 40 CFR 60.42c(i)
(7) 40 CFR 60.42c(j)
(8) 40 CFR 60.43c(c)
(9) 40 CFR 60.43c(d)
(10) 40 CFR 60.43c(e)
(11) 40 CFR 60.44c(a)
(12) 40 CFR 60.44c(g)
(13) 40 CFR 60.44c(h)
(14) 40 CFR 60.45c(c)
(15) 40 CFR 60.46c(a)
(16) 40 CFR 60.46c(d)
(17) 40 CFR 60.46c(e)
(18) 40 CFR 60.46c(f)
(19) 40 CFR 60.47c(c)
(20) 40 CFR 60.48c(a)
(21) 40 CFR 60.48c(b)
(22) 40 CFR 60.48c(c)
(23) 40 CFR 60.48c(d)
(24) 40 CFR 60.48c(e)
(25) 40 CFR 60.48c(f)
(26) 40 CFR 60.48c(g)
(27) 40 CFR 60.48c(i)
(28) 40 CFR 60.48c(j)

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12, apply to Boiler 1, Boiler 2, and Boiler 3 except when otherwise specified in 40 CFR 60, Subpart Dc.

(b) The New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40c-48c, Subpart Dc) are not included for the thermal oxidizer identified as RTO1. The thermal oxidizer does not have a heat recovery steam generator system to produce steam. In addition, the thermal oxidizer has a maximum heat input capacity of 2.5 MMBtu/hr.

(c) Tanks identified as Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C have capacities greater than 151 cubic meters (39,890 gallons) and the stored liquids have vapor pressures greater than 5.2 kPa and less than 76.6 kPa. Therefore, these tanks are subject to the New Source Performance Standards for Volatile Organic Liquid Storage Vessels for which construction, reconstruction, or modification commenced after July 23, 1984 (326 IAC 12, 40 CFR 60.110b - 117b, Subpart Kb).

Nonapplicable portions of the NSPS will not be included in the permit. The Permittee has elected to install internal floating roofs with the fixed roof tanks TK 808, Tank 810A, Tank 810B, and Tank 810C. These tanks are subject to the following portions of 40 CFR 60, Subpart Kb.

(1) 40 CFR 60.110b
(2) 40 CFR 60.111b
(3) 40 CFR 60.112b(a)(1)
(4) 40 CFR 60.113b(a)

(5) 40 CFR 60.115b(a)
(6) 40 CFR 60.116b(a – e)

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12, apply to Tank 801A, Tank 801B, Tank 803, Tank 808, Tank 810A, Tank 810B, and Tank 810C except when otherwise specified in 40 CFR 60, Subpart Kb.

(d) Ethanol is one of the chemicals listed in 40 CFR 60.489. Therefore, this ethanol production plant is subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (326 IAC 12, 40 CFR 60.480 - 489, Subpart VV).

Nonapplicable portions of the NSPS will not be included in the permit. Pumps, compressors, pressure relief devices, sampling connection systems, and valves are subject to the following portions of 40 CFR 60, Subpart VV.

(1) 40 CFR 60.480
(2) 40 CFR 60.481
(3) 40 CFR 60.482-2
(4) 40 CFR 60.482-3
(5) 40 CFR 60.482-4
(6) 40 CFR 60.482-5
(7) 40 CFR 60.482-6
(8) 40 CFR 60.482-7
(9) 40 CFR 60.482-8
(10) 40 CFR 60.482-9
(11) 40 CFR 60.482-10
(12) 40 CFR 60.483-1
(13) 40 CFR 60.483-2
(14) 40 CFR 60.485
(15) 40 CFR 60.486
(16) 40 CFR 60.487

(e) Ethanol is one of the chemicals listed in 40 CFR 60.667. However, according to the EPA memo from Mr. George T. Czerniak dated December 6, 2002, creation of ethanol by fermentation process (biological synthesis) is 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).

(f) This source does not have a grain elevator with a permanent storage capacity greater than 2.5 million bushels. Therefore, the requirements of the New Source Performance Standards for Grain Elevators (326 IAC 12, 40 CFR 60.300-304, Subpart DD) are not included in this permit.

(g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 20, and 40 CFR Part 61 and 63) applicable to this source:

(1) The requirements of the National Emission Standards for Hazardous Air Pollutants - Industrial/Commercial/Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD) are not included in this permit for the three (3) boilers, identified as Boiler 1, Boiler 2, and Boiler 3. The compliance date for this rule for a new or reconstructed boiler or process heater is November 12, 2004 or upon startup of your boiler or process heater, whichever is later. However, the source has accepted federally enforceable limits prior to constructing these three boilers such that HAP emissions from the entire source are less than ten (10) tons per

year for a single HAP and less than twenty-five (25) tons per year for total combined HAPs.

(2) The requirements 40 CFR 63, Subpart F, G, and H – National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry are not included in this permit for the ethanol production plant. To be subject to the requirements of these NESHAP, this source must consist of chemical manufacturing process units that meet all of the criteria in 40 CFR 63.100(b)(1), (b)(2) and (b)(3). The source does not produce synthetic organic chemicals as an intermediate or final product, as listed in Table 1 of 40 CFR 63, Subpart F or in 40 CFR 63.100(b)(1)(i) and (b)(1)(ii).

(3) The requirements of 40 CFR 63, Subpart I – National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks are not included in this permit for the ethanol production plant because this source does not manufacture any of the materials listed in 40 CFR 63.190(b)(1) through (b)(6).

(4) This source will limit HAP emissions from the entire source to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) are not included in this permit.

(5) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements for the NESHAP for Industrial Process Cooling Towers (40 CFR 63, Subpart Q) are not included in this permit.

(6) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Organic Liquids Distribution (non-gasoline) (40 CFR 63, Subpart EEEE) are not included in this permit.

(7) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Miscellaneous Organic Chemical Manufacturing (40 CFR 63, Subpart FFFF) are not included in this permit.

State Rule Applicability – Entire Source

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

The source is in one of the twenty-eight (28) source categories as defined in 326 IAC 2-2-1 and the potential to emit PM, PM10, SO2, VOC, CO, and NOx from the entire source before control is greater than one hundred (100) tons/yr.

In order to make the requirement of 326 IAC 2-2 (PSD) not applicable, the source shall comply with the following emission limitations:

(a) The PM emissions from the grain receiving, handling, and load-out operations shall not exceed the emission limits listed in the table below:

Unit Description	Baghouse ID	PM Emission Limit (lbs/hr)
Truck or Rail Receiving (R-Rcvg)	DC-1	2.06
Straight / Hopper Truck Receiving (T-Rcvg)	DC-2	2.06
Grain Handling (Conv 1)	DC-3	1.51
Grain Handling (Conv 2)	DC-4	1.51

Surge Bin	DC-5	0.07
Hammermill A	DC-6-A	0.37
Hammermill B	DC-6-B	0.37
Hammermill C	DC-6-C	0.37
Hammermill D	DC-6-D	0.37
DDGS Loadout	DC-7	0.32

This is equivalent to 18.2 tons/yr of PM emissions. The source will use baghouses to ensure compliance with the PM limits above. With baghouse control, the source is capable of complying with these limits.

(b) The PM emissions from the thermal oxidizer (RTO1), which is used to control emissions from the fermentation and distillation operations, shall not exceed 0.019 lbs/hr. This is equivalent to 0.083 tons/yr of PM emissions.

(c) The PM emissions from each of the thermal oxidizers, which are used to control emissions from the DDGS drying and cooling systems shall not exceed 3.0 lbs/hr. This is equivalent to 26.3 tons/yr of PM emissions.

(d) The operating hours for the grain receiving operations and Conveyor #1, identified as R-Rcvg, T-Rcvg, and Conv 1, shall each not exceed 4,000 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(e) The Permittee shall use periodic sweeping to control PM emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

Compliance with these limits, combined with the PM emissions from the boilers, the flare use to control Ethanol loadout, grain receiving/loadout fugitives, unpaved roads, and other insignificant activities at this source, the PM emissions from the entire source are limited to less than one hundred (100) tons/yr, making 326 IAC 2-2 not applicable.

The source also accepted limits on the throughput and on the emission rates of PM10, VOC, CO, and NOx, which limit emissions of all regulated pollutants from the entire source to less than one hundred (100) tons/yr (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-2 are not applicable.

326 IAC 2-4.1 (New Sources of Hazardous Air Pollutants)

The source accepted FESOP limits on the HAP emissions from the entire source, which limits the emissions from the source to less ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for any combination of HAPs (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-4.1 are not applicable.

326 IAC 2-8-4 (FESOP)

The potential to emit PM10, SO2, VOC, CO, and NOx, before controls, for the entire source is greater than one hundred (100) tons/yr. In addition, the potential to emit HAP before control from this source is greater than ten (10) tons per year for a single HAP (Acetaldehyde, Formaldehyde, and Methanol) and greater than twenty-five (25) tons per year for total HAPs. Pursuant to 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

(a) The PM10 emissions from the grain receiving, handling, and load-out operations shall not exceed the emission limits listed in the table below:

Unit Description	Baghouse ID	PM10 Emission Limit (lbs/hr)
Truck or Rail Receiving (R-Rcvg)	DC-1	2.06
Straight / Hopper Truck Receiving (T-	DC-2	2.06

Unit Description	Baghouse ID	PM10 Emission Limit (lbs/hr)
Rcvg)		
Grain Handling (Conv 1)	DC-3	1.51
Grain Handling (Conv 2)	DC-4	1.51
Surge Bin	DC-5	0.07
Hammermill A	DC-6-A	0.37
Hammermill B	DC-6-B	0.37
Hammermill C	DC-6-C	0.37
Hammermill D	DC-6-D	0.37
DDGS Loadout	DC-7	0.32

This is equivalent to 18.2 tons/yr of PM10 emissions. The use of baghouses ensures compliance with the PM10 limits above.

(b) The total grain received by grain receiving (R-Rcvg and T-Rcvg) shall not exceed 730,548 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total DDGS loadout shall not exceed 215,319 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) The operating hours for the grain receiving operations and Conveyor #1, identified as R-Rcvg, T-Rcvg, and Conv 1, shall each not exceed 4,000 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(e) The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

(f) The emissions from the scrubber (Ethanol Scrubber) and the thermal oxidizer (RTO1) system, which is used to control emissions from the fermentation and distillation scrubber, shall not exceed the following:

(1) PM10 emissions shall not exceed 0.019 lbs/hr. This is equivalent to 0.083 tons/yr of PM10 emissions.

(2) VOC emissions shall not exceed 6.12 lbs/hr. This is equivalent to 26.8 tons/yr of VOC emissions.

(3) CO emissions shall not exceed 0.21 lbs/hr. This is equivalent to 0.92 tons/yr of CO emissions.

(4) SO_2 emissions shall not exceed 0.0016 lbs/hr. This is equivalent to 0.007 tons/yr of SO_2 emissions.

(5) NOx emissions shall not exceed 0.13 lbs/hr. This is equivalent to 0.55 tons/yr of NOx emissions.

(6) Total HAP emissions shall not exceed 0.087 lbs/hr. This is equivalent to 0.38 tons/yr. Acetaldehyde emissions shall not exceed 0.082 lbs/hr, which is equivalent to 0.36 tons/yr of emissions.

(g) The emissions from thermal oxidizers (EcoDry1 and EcoDry2), which are used to control emissions from the DDGS drying and cooling systems, shall not exceed the following:

(1) PM/PM10 emissions shall not exceed 3.0 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). This is equivalent to 26.3 tons/yr of PM emissions.

(2) VOC emissions shall not exceed 2.0 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). This is equivalent to 56.1 tons/yr of VOC emissions.

(3) CO emissions shall not exceed 5.0 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). This is equivalent to 43.8 tons/yr of CO emissions.

(4) SO2 emissions shall not exceed 0.26 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). This is equivalent to 0.23 tons/yr of SO2 emissions.

(5) NOx emissions shall not exceed 6.4 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). This is equivalent to 56.1 tons/yr of NOx emissions.

(6) Acetaldehyde emissions shall not exceed 0.69 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). This is equivalent to 6.03 tons/yr of Acetaldehyde emissions.

(7) Total HAP emissions shall not exceed 1.29 lbs/hr for each stack (S-EcoDry1 and S-EcoDry2). This is equivalent to 11.3 tons/yr of HAP emissions.

(h) The Permittee shall comply with the following requirements for the ethanol loading system:

(1) The denatured ethanol load-out rate shall not exceed 74,460,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The Permittee shall use a flare identified as Flare to control the emissions from ethanol loading system.

(3) CO emissions from the Flare shall not exceed 0.084 lbs/kgal. This is equivalent to 3.11 tons/yr of CO emissions.

(4) NOx emissions from the Flare shall not exceed 0.0334 lbs/kgal. This is equivalent to 1.24 tons/yr of NOx emissions.

(5) VOC emissions from the Flare shall not exceed 0.112 lbs/kgal. This is equivalent to 4.17 tons/yr of VOC emissions.

(6) The ethanol loading rack shall utilize submerged loading methods.

(7) The railcars and trucks shall not use vapor balance services.

(i) The Permittee shall comply with the following requirements for the boilers identified as Boiler 1, Boiler 2, and Boiler 3:

(1) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the input of natural gas to the boilers shall be limited to 1432.3 MMCF per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purpose of determining compliance with this limit, one gallon of No.2 fuel oil or biodiesel shall be considered equal to 5.77E-4 million cubic feet of natural gas equivalents, based on nitrogen oxide emissions.

(2) When burning No. 2 fuel oil or biodiesel:

(A) NOx emissions shall not exceed 28.9 pounds per kgal.

(B) CO emissions shall not exceed 9.8 pounds per kgal.

(C) SO_2 emissions shall not exceed 72.8 pounds per kgal.

(3) When burning natural gas:

(A) NOx emissions shall not exceed 50.0 pounds per MMCF.

(B) CO emissions shall not exceed 55.0 pounds per MMCF.

This usage and emission factor limits shall ensure that nitrogen oxide emissions from the boilers are less than 35.8 tons per twelve (12) consecutive month period, ensure that SO2 emissions from the boilers are less than 91.0 tons per twelve (12) consecutive month period and CO emissions are less than 39.4 tons per twelve (12) consecutive month period. Compliance with these limits, combined with the NOx, SO2, and CO emissions from other units, the NOx, SO2, and CO emissions from the entire source are limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-6 (Emission Reporting)

This source is located in Benton County, is not required to operate under a Part 70 permit, and emits less than 5 tons per year of lead. Therefore, the requirements of 326 IAC 2-6 are not applicable to this source. Therefore, pursuant to 326 IAC 2-6-1(b), the source is only subject to additional information requests as provided in 326 IAC 2-6-5.

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 for sources 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.

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Emissions Limitations)

The potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the paved roads at this source are less than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are not applicable.

State Rule Applicability - Grain Receiving and Handling Operations

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

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limit listed in the table below:

Emission Unit	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Truck or Rail Receiving (R-Rcvg)	560	70.3
Straight / Hopper Truck Receiving (T-Rcvg)	560	70.3
Grain Handling (Conv 1)	840	75.4
Grain Handling (Conv 2)	840	75.4
Surge Bin	92.4	50.5

Hammermill A	30.8	40.2
Hammermill B	30.8	40.2
Hammermill C	30.8	40.2
Emission Unit	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Hammermill D	30.8	40.2
DDGS Loadout	24.6	35.1
Silo 1	83.1	49.4
Emission Unit	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Silo 2	83.1	49.4
Silo 3	83.1	49.4
Silo 4	83.1	49.4

The pounds per hour limitations were calculated using one of the following equations:

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

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

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

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

Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limits shown in the table above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gases.

According to the emission calculations (see Appendix A), the potential to emit PM after control from the grain receiving and handling operations is less than the emission limits above. Therefore, these operations are capable of complying with 326 IAC 6-3-2. The use of the baghouses DC-1, DC-2, DC-3, DC-4, DC-5, DC-6-A, DC-6-B, DC-6-C, DC-6-D, and DC-7 is necessary to ensure compliance with the limits above.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The potential VOC emissions from each of the grain receiving and handling operations, as well as the DDGS loadout operations, are less than 25 tons/yr. Therefore, the requirements of 326 IAC 8-1-6 (BACT) are not applicable to the grain receiving and handling operations and DDGS loadout operations.

State Rule Applicability – Boilers

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 = PM emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

The total source heat input capacity is 54.5 + 54.5 + 54.5 = 163.5 MMBtu/hr. Therefore, the PM emission limit for each of the boilers identified as Boiler 1, Boiler 2, and Boiler 3 is calculated as follows:

$$Pt = \frac{1.09}{163.5^{0.26}} = 0.289 \text{ lbs/MMBtu.}$$

A PM emission limit of 0.289 lbs/MMBtu is equivalent to 15.7 lbs/hr (0.289 lbs/MMBtu x 54.5 MMBtu/hr = 15.7 lbs/hr) of PM emissions from each of the boilers identified as Boiler 1, Boiler 2, and Boiler 3. According to the emission calculations in Appendix A, the total PM emissions from Boiler 1, Boiler 2, and Boiler 3 is 1.84 lbs/hr. Therefore, the boilers are capable of complying with the PM requirements in 326 IAC 6-2-4.

State Rule Applicability – Fermentation and Distillation Process

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process and distillation process will be constructed after January 1, 1980 and have potential VOC emissions greater than twenty-five (25) tons per year. Therefore, this fermentation and distillation process is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions through the use of Best Available Control Technology (BACT). According to the BACT analysis in Appendix B, the BACT for this process has been determined to be the following:

(a) The VOC emissions from the fermentation and distillation processes shall be controlled by the wet scrubber, identified as Ethanol Absorber, and the thermal oxidizer, identified as RTO1.

(b) The overall VOC control efficiency for the wet scrubber and thermal oxidizer system identified as Ethanol Absorber and RTO1 (including the overall capture efficiency and overall destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the wet scrubber and thermal oxidizer control system stack (S-RTO1) shall not exceed 6.12 lbs/hr.

State Rule Applicability – DDGS Drying and Cooling Systems

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

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the DDGS drying and cooling systems (DDGS Dryer 1 and DDGS Dryer 2) shall not exceed the pound per hour limits listed in the table below:

Emission Unit	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
DDGS Dryer 1	24.6	35.1
DDGS Dryer 2	24.6	35.1

The pounds per hour limitations were calculated using the following equation:

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

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The use of the thermal oxidation systems (EcoDry1 and EcoDry2) is necessary to ensure compliance with the emission limits above.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The source proposes to construct a drying and cooling system where cooling is an integral part of the drying process. Therefore, drying and cooling are considered a single process for purposes of determining applicability to 326 IAC 8-1-6. These DDGS dryer and cooling systems (DDGS Dryer 1 and DDGS Dryer 2) will be constructed after January 1, 1980 and have potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this

process. Therefore, these systems (dryers and cooling) are subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions from this process using the Best Available Control Technology (BACT). Based on the information in Appendix B, BACT for this process has been determined to be the following:

(a) The VOC emissions from the DDGS dryer and cooling systems (DDGS Dryer 1 and DDGS Dryer 2) shall be controlled by thermal oxidation systems, identified as EcoDry1 and EcoDry2, respectively.

(b) The overall efficiency for the thermal oxidation systems, identified as EcoDry1 and EcoDry2 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The total VOC emissions from each of the thermal oxidation systems stacks (S-EcoDry1 and S-EcoDry2) shall not exceed 2.0 lbs/hr.

State Rule Applicability – Ethanol Loading Racks (Ethanol Truck Loadout and Ethanol Rail Loadout)

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The ethanol loading racks at this source will be constructed after January 1, 1980 and have potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this unit. Therefore, this unit is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions with the Best Available Control Technology (BACT). Based on the information provided in Appendix B, BACT for the ethanol loading racks has been determined to be the following:

(a) The VOC emissions from the ethanol loading racks shall be collected and controlled by the enclosed flare identified as Flare.

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

(c) The VOC emissions from the enclosed flare identified as Flare shall not exceed 4.03 lbs/hr. This limit was calculated based on the VOC emission factor of 5.61 lbs/kgal, the maximum loadout rate of 36 kgal/hr, and the flare control efficiency of 98% (5.61 lbs/kgal x 36 kgal/hr x (1-98%) = 4.03 lbs/hr). The VOC emission factor of 3.9 lbs/kgal is calculated from AP-42, Section 5.2.2 - Loading Losses, Table 5.2-2.

State Rule Applicability - Cooling Tower (Insignificant Activity)

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

Pursuant to 326 IAC 6-3-1(b)(11), particulate emissions from the noncontact cooling tower systems are exempt from the requirements of 326 IAC 6-3.

State Rule Applicability – Storage Tanks (Insignificant Activities)

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

The gasoline tank (Tank 808) and the denaturant storage tanks (Tank 810A, Tank 810B, and Tank 810C) each have maximum capacities greater than 39,000 gallons and will be used to store gasoline which has a vapor pressure greater than 1.52 psi. Therefore, these tanks are subject to the requirements of 326 IAC 8-4-3. Tank 808, Tank 810A, Tank 810B, and Tank 810C will each be equipped with an internal floating roof.

(a) Pursuant to 326 IAC 8-4-3(b)(1)(B), the gasoline tank (Tank 808) and the denaturant storage tanks (Tank 810A, Tank 810B, and Tank 810C) shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.

(b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, are equipped with covers, lids, or seals such that:

(1) The cover, lid or seal in the closed potion 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.

(c) Pursuant to 326 IAC 8-4-3(d), the Permittee shall maintain the following records for a period of two (2) years for the gasoline tank (Tank 808) and the denaturant storage tanks (Tank 810A, Tank 810B, and Tank 810C):

(1) The types of volatile petroleum liquid stored;

(2) The maximum true vapor pressure of the liquids as stored; and

(3) The results of the inspections performed on the storage vessels.

The above records shall be made available to the IDEM, OAQ upon written request. All other tanks located at the source will not be used to store petroleum. Therefore, these tanks are not subject to requirements of 326 IAC 8-4-3.

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

The source is not located in Clark, Floyd, Lake, or Porter County. Therefore, the requirements of 326 IAC 8-9-1 are not applicable to the tanks at this source.

Testing Requirements

In order to demonstrate compliance with the FESOP, PSD minor limits, and 40 CFR 60, Subpart Dc, 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 the ethanol production plant:

(a) PM and PM10 tests for DC-1, DC-2, DC-3, DC-4, DC-5, and DC-7, which are used to control the particulate emissions from emission units identified as Grain Receiving (R-Rcvg and T-Rcvg), Grain Handling (Conv 1), Grain Handling (Conv 2), Surge Bin, and DDGS Loadout.

(b) PM and PM10 tests for one of the baghouses DC-6-A, DC-6-B, DC-6-C, and DC-6-D, which are used to control the particulate emissions from emission units identified as Hammermill A, Hammermill B, Hammermill C, Hammermill D.

(c) VOC, NOx, CO, and HAP tests for the outlet of the wet scrubber/thermal oxidizer stack (S-RTO1). The wet scrubber/thermal oxidizer system (Ethanol Absorber and RTO1) is used to control the emissions from the fermentation and distillation processes.

(d) NOx, and CO emissions from one of the boilers identified as Boiler 1, Boiler 2, and Boiler 3. The boilers must be tested at worse case scenario for each pollutant. For example, the boiler supplier provided CO emission rates for natural gas combustion which vary depending upon the operating load for the unit. The anticipated emission rate is 0.04 lb/mmBtu whenever the boiler operates above 50% load and 0.11 lb/mmBtu if it is operating less than 50% load. At maximum load, hourly CO emissions are 2.18 lb/hr and at 50% load emissions are 3.00 pounds per hour. Therefore, the low load emission factor represents the worst case emission rate.

(e) PM, PM10, VOC (including emission rate, destruction efficiency, and capture efficiency), NOx, CO, and Acetaldehyde emissions from each of the thermal oxidizer stacks (S-

EcoDry1 and S-EcoDry2). The thermal oxidizer system is used to control the emissions from the DDGS dryers (DDGS Dryer 1 and DDGS Dryer 2).

(f) VOC, NOx, and CO emissions from the enclosed flare identified as Flare, which is used to control the emissions from the ethanol loading rack.

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

Compliance 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. The grain receiving, handling, and load-out operations, including Grain Receiving (R-Rcvg and T-Rcvg), Grain Handling (Conv 1), Grain Handling (Conv 2), Surge Bin, Hammermill A, Hammermill B, Hammermill C, Hammermill D, and the DDGS handling and loadout operations (DDGS Loadout) have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses DC-1, DC-2, DC-3, DC-4, DC-5, DC-6-A, DC-6-B, DC-6-C, DC-6-D, and DC-7.

   Visible Emissions Notations

   (a) Visible emission notations of the baghouse stack exhausts (stacks S-1, S-2, S-3, S-4, S-5, S-6-A, S-6-B, S-6-C, S-6-D, and S-7) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor 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 or contractor is a person who has worked or trained 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.

Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving and handling operations (R-Rcvg, T-Rcvg, Conv 1, Conv 2, and Surge Bin), the hammermills (Hammermill A, Hammermill B, Hammermill C, Hammermill D), and the DDGS handling and loadout operations (DDGS Loadout), at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

(c) In the event that bag failure has been observed:

(1) 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).

(2) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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.

These monitoring conditions are necessary because the baghouses controlling grain receiving, handling, and load-out operations, including Grain Receiving (R-Rcvg and T-Rcvg), Grain Handling (Conv 1), Grain Handling (Conv 2), Surge Bin, Hammermill A, Hammermill B, Hammermill C, Hammermill D, and the DDGS handling and loadout operations (DDGS Loadout) must operate properly to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8 (FESOP), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

2. The fermentation and distillation processes, which are controlled by the wet scrubber, identified as Ethanol Absorber, and the thermal oxidizer system, identified as RTO1, have applicable compliance monitoring conditions as specified below:

Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the RTO system stack (S-RTO1) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable 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.

(f) A continuous monitoring system shall be calibrated, maintained, and operated on the RTO system (RTO1) 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 1,400°F.

(g) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM.

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

(i) The Permittee shall determine fan amperage or duct pressure from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM, OAQ.

(j) 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.

(k) The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber identified as Ethanol Absorber at least once per day when the fermentation and/or the distillation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 6.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 10.7 gallons per minute, 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 mentioned 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.

(l) In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have 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). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

These monitoring conditions are necessary because the wet scrubber (Ethanol Absorber) and thermal oxidizer (RTO1) must operate properly at all times the fermentation and distillation processes are in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 8-1-6 (BACT), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

3. The DDGS dryer and cooling processes, which are controlled by two thermal oxidizer systems (EcoDry1 and EcoDry2), have applicable compliance monitoring conditions as specified below:

Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the thermal oxidizers (stacks S-EcoDry1 and S-EcoDry2) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable 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.

(f) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizers (EcoDry1 and EcoDry2) 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 oxidizers at or above the 3-hour average temperature of 1,400°F.

(g) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM.

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

(i) The Permittee shall determine fan amperage or duct pressure from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM, OAQ.

(j) 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.

These monitoring conditions are necessary because the thermal oxidizers (EcoDry1 and EcoDry2) must operate properly at all times the fermentation and distillation processes are in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 8-1-6 (BACT), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

4. The ethanol loading system (Ethanol Truck Loadout and Ethanol Rail Loadout), which is controlled by the enclosed flare identified as Flare, has applicable compliance monitoring conditions as specified below:

The presence of a flare flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

These monitoring conditions are necessary because the enclosed flare identified as Flare must operate properly at all times that the ethanol loading system (Ethanol Truck Loadout and Ethanol Rail Loadout) is in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-1-6 (BACT).

Conclusion

The construction and operation of this ethanol production plant shall be subject to the conditions of FESOP 007-23773-00018.

Appendix B
Best Available Control Technology (BACT) Determinations

Source Background and Description

Source Name:	Ceres Holdings, LLC
Source Address:	2800 W 300 N, Fowler, Indiana 47944
Mailing Address:	98 S. 100 E., Ste A PO Box 668, Fowler, Indiana 47944
FESOP Permit No.:	007-23773-00018
County:	Benton
SIC Code:	2869
Permit Reviewer:	ERG/JR

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) reviews for a new ethanol production plant. Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), 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 the calculations (see Appendix A) and the analysis of applicable state regulations (see State Rule Applicability section of TSD), the following facilities are subject to the requirements of 326 IAC 8-1-6:

- Fermentation Process;
- Distillation and Dehydration Process;
- DDGS Dryers (Swiss-Combi “Eco-Dry” Dryer Systems); and
- Ethanol Loadout.

IDEM, OAQ conducts BACT analyses in accordance with the *“Top-Down” Best Available Control Technology Guidance Document* outlined in the 1990 draft US EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below:

(a) Identify all potentially available control options;
(b) Eliminate technically infeasible control options;
(c) Rank remaining control technologies by control effectiveness;
(d) Evaluate the most effective controls and document the results as necessary; and
(e) Select BACT.

In accordance with EPA guidance, the BACT analysis should take into account the 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.

A summary of the BACT review for the fermentation process is provided in Section B.1, the BACT review for the distillation and dehydration process is provided in Section B.2, the BACT review for the DDGS dryers is provided in Section B.3, and the BACT review for the ethanol loadout is provided in Section B.4. These BACT determinations are based on the following information:

(a) The EPA RACT/BACT/LAER (RBLC) Clearinghouse; and
(b) State and local air quality permits.

Appendix B.1
Best Available Control Technology (BACT) Determination
For the Fermentation Process

Introduction:

Ceres Holdings, LLC will use a fermentation process to produce ethanol from grain. The fermentation process will consist of a prefermentation tank, six (6) main fermenters, and one (1) beer tank. The potential VOC emissions from these activities are estimated to be greater than 25 tons per year. Since this facility will be constructed after the January 1, 1980 applicability date and there are no other 326 IAC 8 rules applicable to this process, Ceres Holdings, LLC is required 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 available technologies were identified and evaluated to control VOC emissions from the fermentation process at ethanol production plants:

(a) IDEM, OAQ reviewed the following six control technologies:

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 VOC control efficiency greater than 90%.

(b) The search for the fermentation process in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
DRS Ventures, LLC	F139-22981-00020	11/13/06 (IN)	Fermentation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 6.12 lbs/hr.	Under Construction.
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 7.62 lbs/hr.	Under Construction.
Premier Ethanol, LLC	F075-22858-00032	9/18/06(IN)	Fermentation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 99% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction.
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 5.85 lbs/hr.	Under Construction.
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 7.5 lbs/hr.	Under Construction.
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 10.2 lbs/hr.	Under Construction.
Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98%. VOC emissions < 2.22 lbs/hr.	Under Construction.

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	08/04/05 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 6.0 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, IDEM obtained the following information for the fermentation processes at other ethanol production plants from ICM (an ethanol plant manufacturer):

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)

* 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, IDEM, OAQ eliminated carbon adsorption as not technically feasible for fermentation processes. The reasons for eliminating carbon adsorption are as follows:

Carbon Adsorption: 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, IDEM, OAQ has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency
Wet Scrubber and Thermal Oxidizer	99% or <10 ppmv
Wet Scrubber	99% or <10 ppmv
Thermal Oxidizer	99% or <10 ppmv
Catalytic Oxidizer	98%
Flare	98%
Refrigeration Condenser	90%

Step 4 – Evaluate the Most Effective Controls and Document Results

IDEM is aware that other vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to 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. A wet scrubber, a thermal oxidizer, and the combination of a wet scrubber and thermal oxidizer are each capable of achieving the same level of control.

Step 5 – Select BACT

The Permittee proposes to use the combination of a wet scrubber and thermal oxidizer as the BACT for the fermentation process. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the fermentation process at this source:

(a) The VOC emissions from the fermentation process shall be controlled using a wet scrubber and thermal oxidizer.

(b) The overall average VOC control efficiency for the wet scrubber and thermal oxidizer system shall be at least 98% or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the wet scrubber and thermal oxidizer control system stack (S-RTO1) shall not exceed 6.12 lbs/hr.

Appendix B.2
Best Available Control Technology (BACT) Determination
For Distillation and Dehydration Process

Introduction:

Ceres Holdings, LLC will use distillation to concentrate the ethanol produced in the fermentation process. The potential VOC emissions from the distillation process are estimated to be greater than 25 tons per year. Since this facility will be constructed after the January 1, 1980 applicability date and there are no other 326 IAC 8 rules applicable to this process, Ceres Holdings, LLC is required to implement BACT to comply with 326 IAC 8-1-6.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the distillation and dehydration process at ethanol production plants:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detailed description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers (packed tower);
3. Thermal Oxidation;
4. Catalytic Oxidation;
5. Flare; and
6. Refrigeration Condenser.

(b) The search for the distillation process in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
DRS Ventures, LLC	F139-22981-00020	11/13/06 (IN)	Distillation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 6.12 lbs/hr.	Under Construction
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Distillation/Dryers	RTOs with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 7.5 lbs/hr.	Under Construction.
Premier Ethanol, LLC	F075-22858-00032	9/18/06 (IN)	Distillation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 99% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Distillation	TO/HRSG system with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 10.5 lbs/hr	Under Construction
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Distillation and Evaporation processes	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 8.15 lbs/hr	Under Construction

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Distillation	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 8.5 lbs/hr	Under Construction
Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Distillation	TO/HRSG system with a control efficiency of 98%. VOC emissions < 10.56 lbs/hr	Under Construction
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Fermentation/ Distillation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 6.0 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

Step 2 – Eliminate Technically Infeasible Control Options

IDEM, OAQ believes that carbon adsorption is not technically feasible for the control of VOC emissions from the distillation process. 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, IDEM, OAQ has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency
Wet Scrubber and Thermal Oxidizer	99% or <10 ppmv
Wet Scrubber	99% or <10 ppmv
Thermal Oxidizer	99% or <10 ppmv
Catalytic Oxidizer	98%
Flare	98%
Refrigeration Condenser	90%

Step 4 – Evaluate the Most Effective Controls and Document Results

IDEM is aware that other vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to 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. A wet scrubber, a thermal oxidizer, and the combination of a wet scrubber and thermal oxidizer are each capable of achieving the same level of control.

Step 5 – Select BACT

The Permittee proposes to use the combination of a wet scrubber and thermal oxidizer as the BACT for the distillation process. Therefore, pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the distillation process at this source:

(a) The VOC emissions from the distillation process shall be controlled using a wet scrubber and thermal oxidizer.

(b) The overall average VOC control efficiency for the wet scrubber and thermal oxidizer system shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the wet scrubber and thermal oxidizer control system stack (S-RTO1) shall not exceed 6.12 lbs/hr.

Appendix B.3
Best Available Control Technology (BACT) Determination
For the DDGS Swiss Combi Dryer and Cooling Systems (DDGS Dryer 1 and DDGS Dryer 2)

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 the DDGS dryers are greater than 25 tons per year and there are no other rules in 326 IAC 8 applicable to DDGS dryers; therefore, the Permittee is required to control the VOC emissions from the DDGS dryers with BACT.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the dryers at ethanol production plants:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detailed description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers;
3. Thermal Oxidation;
4. Catalytic Oxidation;
5. Flare; and
6. Refrigeration Condenser.

(b) The search for DDGS dryers in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
DRS Ventures, LLC	F139-22981-00020	11/13/06 (IN)	Dryers	Thermal Oxidation with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 2.0 lbs/hr.	Under Construction
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Distillation/ Dryers	RTOs with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 7.5 lbs/hr.	Under Construction.
Premier Ethanol, LLC	F075-22858-00032	9/18/06 (IN)	Dryers	Thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Dryers	TO/HRSG system with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr	Under Construction
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Dryers	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 8.15 lbs/hr	Under Construction
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Dryers	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 8.5 lbs/hr	Under Construction
Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Dryers	TO/HRSG system with a control efficiency of 98%. VOC emissions < 10.56 lbs/hr	Under Construction
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Dryers	RTO with a control efficiency of 98%. VOC emissions < 6.0 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

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
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)

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ 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: 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, IDEM, OAQ concludes that carbon adsorption is not an effective control for the DDGS dryers due to the characteristics of the dryer exhaust gases.

Catalytic Oxidizer: 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, IDEM, OAQ has concluded that catalytic oxidation is an unreliable control technology for the dryers because of the presence of particulates in the exhaust gases.

Flares: 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.

Refrigeration Condensers: IDEM, OAQ believes that 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

IDEM, OAQ has ranked the remaining control technologies by control efficiency as follows:

Control Technology	Control Efficiency
Thermal Oxidation	99% or < 10 ppmv
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 99%. IDEM is aware that other vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to 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.

Step 5 – Select BACT

The Ceres Holdings facility proposed to use two thermal oxidizers, each with control efficiencies of 98%, to control the VOC emissions from the two DDGS drying and cooling systems. The cooling system is integral to the drying process and the two thermal oxidizers (EcoDry1 and EcoDry2) are unique in that they control exhaust from the DDGS dryers as well as the exhaust from the DDGS cooler/cyclone operation. The two thermal oxidizers will vent to stacks S-EcoDry1 and S-EcoDry2, respectively. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the DDGS drying and cooling systems at this source:

(a) The VOC emissions from the DDGS dryer and cooling systems shall be controlled by thermal oxidation.

(b) The overall efficiency for the thermal oxidation systems (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The total VOC emissions from each of the thermal oxidation systems stacks (S-EcoDry1 and S-EcoDry2) shall not exceed 2.0 lbs/hr.

Appendix B.4
Best Available Control Technology (BACT) Determination
For the Ethanol Loading Racks (Ethanol Truck Loadout and Ethanol Rail Loadout)

Introduction:

Ceres Holdings, 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 railcars are dedicated tanks, but the trucks may carry gasoline or be unclean before filling with 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) and are estimated to be greater than 25 tons per year from the denatured ethanol loading operations (see calculations in Appendix A).

The potential VOC emissions from the ethanol loading racks are greater than 25 tons per year. Since these units will be constructed after the January 1, 1980 applicability date and there are no other rules in 326 IAC 8 applicable to these units, the Permittee is required to control the VOC emissions from the ethanol loading racks with BACT.

Step 1 – Identify Control Options

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detailed description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers;
3. Thermal Oxidation;
4. Flare; and
5. Refrigeration Condenser.

(b) The search for ethanol loading process in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
DRS Ventures, LLC	F139-22981-00020	11/13/05 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.26 lbs/hr.	Under Construction.
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC < 0.92 lbs/hr.	Under Construction.
Premier Ethanol, LLC	F075-22858-00032	9/18/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.92 lbs/hr.	Under Construction.
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.92 lbs/hr.	Under Construction.
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 2.03 lbs/hr.	Under Construction.
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 1.25 lbs/hr.	Under Construction.
Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.0224 lbs per 1000 gallons of denatured ethanol, and < 0.70 tpy. Submerged fill loading that uses normal service.	Under Construction.

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	08/04/05 (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

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ 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: 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: 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. IDEM, OAQ reviewed industry data to determine the VOC control efficiency of each of the remaining control technologies. The results of this review are summarized in the following table:

Control Technology	VOC Control Efficiency
Flare	98%
Thermal Oxidizer	99%
Refrigeration Condenser	Greater than 90%

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 99%. IDEM is aware that other vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to 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.

Step 5 – Select BACT

Ceres Holdings, LLC proposed to use a flare, identified as Flare, with a destruction efficiency of 98% to control the VOC emissions from the truck and railcar ethanol loading rack. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the ethanol loading racks at this source:

(a) The VOC emissions from the ethanol loading racks shall be collected and controlled by the enclosed flare identified as Flare.

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

(c) The VOC emissions from the enclosed flare identified as Flare shall not exceed 4.03 lbs/hr.

Appendix A: Emission Calculations
No. 2 Fuel Oil or Biodiesel Combustion Only
(Boiler 1, Boiler 2, and Boiler 3)
(54.5 MMBtu/hr each)

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Heat Input Capacity
MMBtu/hr

163.5 (54.5 MMBtu/hr each)

Limited Number of gallons per year* 2,482,322
Limited Heat Input Capacity (Btu/yr)** 3.48E+11

	Pollutant					
	PM	PM10	SO2	NO_x	VOC	CO
Emission Factor in lb/MMBtu***	0.025	0.025	0.52	0.206	0.03	0.07
Potential Emissions in tons/yr	17.9	17.9	372.4	147.3	21.5	50.1
Limited Potential Emissions in tons/yr	4.34	4.34	90.36	35.74	5.21	12.16

* The input of natural gas to the boilers is limited to 1432.3 MMCF per twelve (12) consecutive month period. For the purpose of determining compliance with this limit, one gallon of No.2 fuel oil or biodiesel shall be considered equal to 5.77E-4 million cubic feet of natural gas equivalents, based on nitrogen oxide emissions. This usage limit is required to limit the potential to emit nitrogen oxide emissions from the boilers to less than 35.8 tons per twelve (12) consecutive month period. 1432.3 (MMCF/yr) x (1 gallon Oil / 5.77E-4 MMCF) = 2,482,322 gallons Oil/yr
** The limited heat input capacity is based on the heat value for No. 2 fuel oil, 140000 Btu/gal.
*** These emission factors are supplied by the manufacturer and are more conservative than the AP-42 emission factors.

Methodology
Potential Emissions in tons/yr = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu)* 8760 hr/yr * 1 ton/2000lbs
Limited Potential Emissions in tons/yr = Limited Heat Input Capacity (Btu/yr) x 1 MMBtu/10^6 Btu x Emission Factor (lb/MMBtu) * 1 ton/2000lbs

See next page for HAPs emissions calculations.

Appendix A: Emission Calculations
No. 2 Fuel Oil or Biodiesel Combustion Only
HAPs Emissions
(Boiler 1, Boiler 2, and Boiler 3)
(54.5 MMBtu/hr each)

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Potential Throughput
kgals/year

10230.4

Limited Number of gallons per year 2,482,322
Limited Heat Input Capacity (Btu/yr)* 3.48E+11

HAPs - Metals

	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/MMBtu **	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	2.86E-03	2.15E-03	2.15E-03	2.15E-03	6.45E-03
Limited Potential Emissions in tons/yr	6.95E-04	5.21E-04	5.21E-04	5.21E-04	1.56E-03

HAPs - Metals (continued)

	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/MMBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential Emission in tons/yr	2.15E-03	4.30E-03	2.15E-03	1.07E-02
Limited Potential Emissions in tons/yr	5.21E-04	1.04E-03	5.21E-04	2.61E-03

* The limited heat input capacity is based on the heat value for No. 2 fuel oil, 140000 Btu/gal.
** Emission Factors are from AP-42, Table 1.3-10 (SCC 1-03-005-01/02/03) Supplement E 9/98.

Methodology
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 kgal/1,000 gal x 1 gal/0.140 MMBtu
Potential Emissions (tons/year) = Throughput (MMBtu/hr)*Emission Factor (lb/MMBtu)*8,760hrs/yr / 2,000lb/ton
Limited Potential Emissions in tons/yr = Limited Heat Input Capacity (Btu/yr) x 1 MMBtu/10^6 Btu x Emission Factor (lb/MMBtu) * 1 ton/2000lbs
No data was available in AP-42 for organic HAPs.

Appendix A: Emission Calculations
No. 2 Fuel Oil or Biodiesel Combustion Only
(Boiler 1, Boiler 2, and Boiler 3)
(54.5 MMBtu/hr each)

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Heat Input Capacity
MMBtu/hr

163.5 (54.5 MMBtu/hr each)

Limited Number of gallons per year* 2,482,322
Limited Heat Input Capacity (Btu/yr)** 3.48E+11

	Pollutant					
	PM	PM10	SO2	NO_x	VOC	CO
Emission Factor in lb/MMBtu***	0.025	0.025	0.52	0.206	0.03	0.07
Potential Emissions in tons/yr	17.9	17.9	372.4	147.3	21.5	50.1
Limited Potential Emissions in tons/yr	4.34	4.34	90.36	35.74	5.21	12.16

* The input of natural gas to the boilers is limited to 1432.3 MMCF per twelve (12) consecutive month period. For the purpose of determining compliance with this limit, one gallon of No.2 fuel oil or biodiesel shall be considered equal to 5.77E-4 million cubic feet of natural gas equivalents, based on nitrogen oxide emissions. This usage limit is required to limit the potential to emit nitrogen oxide emissions from the boilers to less than 35.8 tons per twelve (12) consecutive month period. 1432.3 (MMCF/yr) x (1 gallon Oil / 5.77E-4 MMCF) = 2,482,322 gallons Oil/yr
** The limited heat input capacity is based on the heat value for No. 2 fuel oil, 140000 Btu/gal.
*** These emission factors are supplied by the manufacturer and are more conservative than the AP-42 emission factors.

Methodology
Potential Emissions in tons/yr = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu)* 8760 hr/yr * 1 ton/2000lbs
Limited Potential Emissions in tons/yr = Limited Heat Input Capacity (Btu/yr) x 1 MMBtu/10^6 Btu x Emission Factor (lb/MMBtu) * 1 ton/2000lbs

See next page for HAPs emissions calculations.

Appendix A: Emission Calculations
No. 2 Fuel Oil or Biodiesel Combustion Only
HAPs Emissions
(Boiler 1, Boiler 2, and Boiler 3)
(54.5 MMBtu/hr each)

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Potential Throughput
kgals/year

10230.4

Limited Number of gallons per year 2,482,322
Limited Heat Input Capacity (Btu/yr)* 3.48E+11

HAPs - Metals

	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/MMBtu **	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	2.86E-03	2.15E-03	2.15E-03	2.15E-03	6.45E-03
Limited Potential Emissions in tons/yr	6.95E-04	5.21E-04	5.21E-04	5.21E-04	1.56E-03

HAPs - Metals (continued)

	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/MMBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential Emission in tons/yr	2.15E-03	4.30E-03	2.15E-03	1.07E-02
Limited Potential Emissions in tons/yr	5.21E-04	1.04E-03	5.21E-04	2.61E-03

* The limited heat input capacity is based on the heat value for No. 2 fuel oil, 140000 Btu/gal.
** Emission Factors are from AP-42, Table 1.3-10 (SCC 1-03-005-01/02/03) Supplement E 9/98.

Methodology
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 kgal/1,000 gal x 1 gal/0.140 MMBtu
Potential Emissions (tons/year) = Throughput (MMBtu/hr)*Emission Factor (lb/MMBtu)*8,760hrs/yr / 2,000lb/ton
Limited Potential Emissions in tons/yr = Limited Heat Input Capacity (Btu/yr) x 1 MMBtu/10^6 Btu x Emission Factor (lb/MMBtu) * 1 ton/2000lbs
No data was available in AP-42 for organic HAPs.

Appendix A: Emission Calculations
PM and PM10 Emissions
From the Grain Receiving and Handling Operations

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

1. Potential to Emit PM/PM10 - Captured Emissions:

Grain Receiving and Handling

Baghouse ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 before Control (tons/yr)
DC-1	Truck or Rail Receiving (R-Rcvg)	Baghouse	0.008	30,000	2.06	4.11	95.7%	210
DC-2	Straight / Hopper Truck Receiving (T-Rcvg)	Baghouse	0.008	30,000	2.06	4.11	95.7%	210
DC-3	Grain Handling (Conv 1)	Baghouse	0.008	22,000	1.51	3.02	96.3%	179
DC-4	Grain Handling (Conv 2)	Baghouse	0.008	22,000	1.51	6.61	96.3%	179
DC-5	Surge Bin	Baghouse	0.008	1,000	0.07	0.30	96.3%	8
Total						18.15		784

Assume all PM emissions equal PM10 emissions.

Annual emission rates (tpy) were computed by assuming 4,000 hours of operation for R-Rcvg, T-Rcvg, and Conv 1 as the plant is not physically capable of receiving grain for 8,760 hours at the maximum rated capacity of truck and rail receiving equipment.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr
PTE of PM/PM10 after Control (tons/yr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr x Hours of Operation x 1 ton/2000 lbs
PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency)

Hammermills **Max Capacity per Hammermill: 269808 tons/yr**

Baghouse ID	Process Description	Control Device	Control Efficiency (%)	Emission Factor (lbs/ton)*	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)	PTE of PM/PM10 before Control (tons/yr)
DC-6-A	Hammermill A	Baghouse	99.0%	0.012	0.37	1.62	161.9
DC-6-B	Hammermill B	Baghouse	99.0%	0.012	0.37	1.62	161.9
DC-6-C	Hammermill C	Baghouse	99.0%	0.012	0.37	1.62	161.9
DC-6-D	Hammermill D	Baghouse	99.0%	0.012	0.37	1.62	161.9
Total						6.48	647.54

Assume all PM emissions equal PM10 emissions.

*Emission Factors from AP-42, Chapter 9, Table 9.9.1-1 (AP-42 Supplement D 3/03) and accounts for 99% control efficiency.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Max Capacity per Hammermill (tons/yr) x Emission Factor (lbs/ton) x 1yr/8760hr
PTE of PM/PM10 after Control (tons/yr) = Max Capacity per Hammermill (tons/yr) x Emission Factor (lbs/ton) x 1 ton/2000 lbs
PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency)

2. Potential to Emit PM/PM10 - Fugitive Emissions:

Unit ID	Unit Description	Maximum Throughput (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	Baghouse ID	Capture Efficiency (%)	Fugitive PM Emissions (tons/yr)	Fugitive PM10 Emissions (tons/yr)
N/A	Grain Receiving	730,548	0.180	0.0590	DC-1/DC-2	90%	6.57	2.16
Total							**6.57**	**2.16**

Note: Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (04/03).
The Permittee stated that there are no fugitive emissions from the grain handling operations because the emissions from these units are 100% captured.

Methodology

Fugitive PM/PM10 (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x (1-Capture Efficiency%) x 1 ton/2000 lbs

Appendix A: Emission Calculations
PM and PM10 Emissions
From the DDGS Handling, Loadout, and Storage Operations

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

1. Potential to Emit PM/PM10 - Captured Emissions:

Baghouse ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 before Control (tons/yr)
DC-7	DDGS Loadout	Baghouse	0.01	3,750	0.32	1.41	99.1%	156.4
Total						1.41		156.43

Assume all PM emissions equal PM10 emissions.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr
PTE of PM/PM10 after Control (tons/yr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr x 8760 hr/yr x 1 ton/2000 lbs
PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency)

2. Potential to Emit PM/PM10 - Fugitive Emissions:

Unit ID	Unit Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	Capture Efficiency (%)	Fugitive PM Emissions (tons/yr)	Fugitive PM10 Emissions (tons/yr)
DDGS Handling	DDGS Handling Operations	215,319	0.0860	0.0290	50%	4.63	1.56
DDGS Storage	DDGS Storage Operations	215,319	0.0033	0.0008	50%	0.18	0.04
Total						**4.81**	**1.60**

Note: Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03).

Methodology

Fugitive PM/PM10 (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x (1-Capture Efficiency%) x 1 ton/2000 lbs

Appendix A: Emission Calculations
VOC and HAP Emissions
From the Fermentation and Distillation Processes
(The fermentation and distillation emissions will use an ethanol scrubber followed by an RTO for controls)

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

1. Process Description:

Max. Throughput Rate: 74.46 MM gal/yr of ethanol
Control Equipment: Ethanol Absorber and RTO1 (2.2 mmBtu/hr)

2. Potential to Emit (PTE) of VOC and HAP:

Pollutant	*Emission Rate after Control (lbs/MMgal)	Emission Rate before Control (lbs/MMgal)	System Control Efficiency (%)	**PTE after System Control (tons/yr)	PTE before System Control (tons/yr)
VOC	1800	36000	98%	**26.81**	1340.28
HAP					
Acetaldehyde	245	490	98%	**0.36**	18.24
Acrolein	5.88	5.88	98%	**0.00**	0.22
Formaldehyde	0.22	0.22	98%	**0.00**	0.01
Methanol	19.9	19.9	98%	**0.01**	0.74
Total HAPs	**271**	**516**		**0.38**	**19.2**

* This is provided by the source based on multiple ethanol facilities' stack test results (Russell Plant and Badger State). The emission factors were found in Iroquois Bio-Energy Company, LLC's permit F073-20945-00037 issued by IDEM on July 22, 2005. VOC emission rate before control is based on 95% control efficiency for the scrubber. HAP control efficiency for the scrubber was 50% for Acetaldehyde and 0% for all others. Ceres Holdings says it will get 98% control efficiency for both VOC and HAP using a scrubber and thermal oxidizer.
** The Permittee will perform stack testing to demonstrate compliance with the above emission rates.

Methodology

PTE after System Control (tons/yr) = Emission Rate after Control (lbs/MMgal) x Max. Throughput Rate (MMgal/yr) x 1 ton/2000 lbs
PTE before System Control (tons/yr) = PTE after Control (tons/yr) / (1- System Control Efficiency)

Appendix A: Emission Calculations
Emissions from Natural Gas Combustion
From One (1) 2.5 MMBtu/hr RTO identified as RTO1

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Criteria Pollutants

Total Heat Capacity **2.5 MMBtu/hr**

	Criteria Pollutant					
	PM	PM10	SO_2	NOx	VOC	CO
Emission Factor*	0.0076 (lb/MMBtu)	0.0076 (lb/MMBtu)	0.0006 (lb/MMBtu)	0.05 (lb/MMBtu)	0.0055 (lb/MMBtu)	0.084 (lb/MMBtu)
Potential to Emit in tons/yr from Combustion	**0.083**	**0.083**	**0.007**	**0.548**	**0.060**	**0.920**

*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)
Note: BTU content of natural gas assumed to be 1000 BTU/scf

Methodology

Potential to Emit in tons/yr from Combustion = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8,760 hrs/yr x 1 ton/2000 lbs

HAPS

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
2.5	21.9

	HAP Pollutant					
	Hexane	Formaldehyde	Toluene	Benzene	Nickel	**Total HAPs**
Emission Factor in lbs/MMCF	1.8E+00	7.5E-02	3.4E-03	2.1E-03	2.1E-03	
Potential to Emit in tons/yr	0.02	0.00	3.72E-05	2.30E-05	2.30E-05	**0.02**

Emission factors are from AP-42, Chapter 1.4, Table 1.4-3 (AP-42, 03/98).
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Methodology

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
PTE (tons/yr) = Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2000 lbs

Appendix A: Emission Calculations
Criteria Pollutants
From Two (2) 43.5 MMBtu/hr DDGS Dryers and Cooling Systems Consisting of Two (2) EcoDry Systems

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Maximum Capacity **215,319 tons/yr**
0.087 MMCF/hr

Control Efficiency* **(VOC) 98%**
(PM/PM10) 95%

	Pollutant					
	PM	PM10	SO_2***	NOx	VOC	CO
Emission Factor**	6.0 (lbs/hr)	6.0 (lbs/hr)	0.6000 (lbs/MMCF)	12.8 (lbs/hr)	4.0 (lbs/hr)	10.0 (lbs/hr)
Potential to Emit Before Control in tons/yr	525.6	525.6	0.23	56.1	876	43.8
Potential to Emit After Control in tons/yr	**26.3**	**26.3**	**0.23**	**56.1**	**17.5**	**43.8**

* The control efficiencies for the EcoDry systems were not provided by the source. However, it is assumed that the EcoDry system will get 95% PM/PM10 control. BACT is 98% control efficiency for VOC.

** Emission factors are based on after control and are estimated by the manufacturer/vendor of EcoDry systems.

*** SO_2 Emission Factor from AP-42, Chapter 1.4, Table 1.4-2, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
The Permittee will perform stack testing to demonstrate compliance with the above emission rates.

Methodology

For SO2:

Potential to Emit Before Control in tons/yr = Emission Factor (lbs/MMCF) x Maximum Capacity (MMCF/hr) x 1 ton/2000 lbs x 8760 hr/yr
Potential to Emit After Control in tons/yr = Potential to Emit Before Control (tons/yr) / (1-Control Efficiency)

For all other pollutants:

Potential to Emit Before Control in tons/yr = Potential to Emit After Control (tons/yr) / (1-Control Efficiency)
Potential to Emit After Control in tons/yr = Emission Factor (lbs/hr) x 1 ton/2000 lbs x 8760 hr/yr

Appendix A: Emission Calculations
HAP Emissions
From Two (2) 43.5 MMBtu/hr DDGS Dryers and Cooling Systems Consisting of Two (2) EcoDry Systems

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Maximum Capacity **215,319 tons/yr**
Control Efficiency **90%**

	Pollutant				
	Acetaldehyde	Acrolein	Formaldehyde	Methanol	Total
Emission Rate after Control (lb/ton DDGS)*	0.56	0.07	0.31	0.11	2.57
PTE before Control in tons/yr	**60.29**	**7.11**	**33.37**	**11.84**	**112.61**
PTE after Control in tons/yr	**6.03**	**0.71**	**3.34**	**1.18**	**11.26**

*HAP emission factors were provided by the source. The Permittee will perform stack tests to verify the HAP emissions from these units.

Methodology

PTE Before Control in tons/yr = PTE after Control (tons/yr) / (1-Control Efficiency)
PTE after Control (tons/yr) = Emission Rate after Control (lbs/ton DDGS) x Maximum Capacity (tons/yr) x 1 ton/2000 lbs x (1-Control Efficiency)

Appendix A: Emission Calculations
VOC and HAP Emissions from Ethanol Loading Racks

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

1. Emission Factors: AP-42

Denatured ethanol will be shipped by either truck loading rack or railcar loading rack. Railcars will be dedicated fleets, but the trucks may be used to carry gasoline prior to filling with ethanol. Both railcars and trucks will be filled by submerged loading process. Both loadout racks will be controlled by a flare 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 racks 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)	1.0	6.9	62	520	10.25
Gasoline (clean cargo)	0.5	6.9	62	520	5.13
Denatured Ethanol (normal)	0.6	0.87	46.07	520	0.58
Denatured Ethanol (clean cargo)	0.5	0.87	46.07	520	0.48

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) = 5.61 (lbs/kgal)

2. Potential to Emit VOC Before Control:

Max. Loading Rate for Truck Loadout: 36.0 kgal/hr (for truck loading)

PTE of VOC before Control (tons/yr) = 36 kgal/hr x 5.61 lbs/kgal x 8760 hr/yr x 1 ton/2000 lbs = **884 tons/yr**

Max. Loading Rate Rail Loadout: 72.0 kgal/hr (for railcar loading)

PTE of VOC before Control (tons/yr) = 72 kgal/hr x 0.58 lbs/kgal x 8760 hr/yr x 1 ton/2000 lbs = **181.7 tons/yr**

3. Limited Potential to Emit:

Annual Production Limit: 74,460 kgal/yr (for both railcar and truck loading)
Flare Control Efficiency: 98% (for both truck and railcar loading)

(1) Assume all denatured ethanol is loaded to trucks (controlled by Loadout Flare):
PTE of VOC (tons/yr) = 5.61 lbs/kgal x 74,460 kgal/yr x (1-98%) x 1 ton/2000 lbs = **4.17 tons/yr**

(2) Assume all denatured ethanol is loaded to railcars (controlled by Loadout Flare):
PTE of VOC (tons/yr) = 0.58 lbs/kgal x 74,460 kgal/yr x (1-98%)x 1 ton/2000 lbs = **0.4 tons/yr**

Worst case scenario is when loading denatured ethanol to trucks and the worst case VOC emissions = 4.17 tons/yr

4. Potential to Emit HAPs:

HAP emissions are mainly from the unloading process for trucks, which may have been used to ship gasoline previously.

HAP	HAP Fraction*	PTE of HAP before Control (tons/yr)	Limited PTE of HAP after Control (tons/yr)
Benzene	2.50E-03	2.21	1.04E-02
Carbon Disulfide	2.00E-05	1.77E-02	8.35E-05
Cumene	1.00E-04	0.09	4.17E-04
Ethyl benzene	5.00E-05	4.42E-02	2.09E-04
n-Hexane	5.00E-02	44.2	2.09E-01
Toluene	5.00E-03	4.42	2.09E-02
Xylene	5.00E-04	0.44	2.09E-03
Total	**0.06**	**51.4**	**0.24**

* This is the HAP fraction for gasoline vapors.

Methodology

PTE of HAP before Control (tons/yr) = PTE of VOC before Control (tons/yr) x HAP %
Limited PTE of HAP after Control (tons/yr) = Limited PTE of VOC by Trucks (tons/yr) x HAP %

Appendix A: Emission Calculations
Combustion Emissions
From Flare for Ethanol Loading Rack

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Heat Input Capacity MMBtu/hr	Max. Load-out Rate kgal/hr	Annual Production Limit kgal/yr
6.4	72.0	74,460

	Pollutant					
	*PM	*PM10	*SO_2	**NO_x	***VOC	**CO
Emission Factor	NA	NA	NA	0.0334 (lbs/kgal)	-	0.084 (lbs/kgal)
Unlimited Potential to Emit in tons/yr	**NA**	**NA**	**NA**	**10.5**	**884**	**26.3**
Limited Potential to Emit in tons/yr	**NA**	**NA**	**NA**	**1.24**	**4.17**	**3.11**

*PM, PM10, and SO_2 emission factors are negligible due to the smokeless design and minimal H_2S levels.
**Emission factors for NO_x and CO are based on the information provided by the flare manufacturer.
*** VOC emission calculations can be found in page 9 of this appendix.

Methodology

Unlimited PTE of NOx and CO (tons/yr) = Max. Load-out Rate (kgal/hr) x Emission Factor (lbs/kgal) x 8760 hr/yr x 1 ton/2000 lbs
Limited PTE of NOx and CO (tons/yr) = Annual Production Limit (kgal/yr) x Emission Factor (lbs/kgal) x 1 ton/2000 lbs

Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 25-Jan-07

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 (non-Winter) =	road surface silt loading (g/m^2) =	0.6	(g/m^2) (AP-42, Table 13.2.1-3)
sL (Winter) =	sL (non-Winter) x 4 (g/m^2) =	2.4	(g/m^2) (AP-42, Table 13.2.1-3)
w =	mean vehicle weight (tons) =	27.5	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 precipitation	120	

PM Emission Factor (non-Winter) = $(0.082 \times (0.6/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.95** lbs/mile
PM10 Emission Factor (non-Winter) = $(0.016 \times (0.6/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.19** lbs/mile

PM Emission Factor (Winter) = $(0.082 \times (2.4/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **2.35** lbs/mile
PM10 Emission Factor (Winter) = $(0.016 \times (2.4/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.46** lbs/mile

PM Emission Factor (Average Annual) = ((PM Emission Factor (non-Winter) x 9) + (PM Emission Factor (Winter) x 3))/12
PM Emission Factor (Average Annual) = **1.30** lbs/mile
PM10 Emission Factor (Average Annual) = ((PM10 Emission Factor (non-Winter) x 9) + (PM10 Emission Factor (Winter) x 3))/12
PM10 Emission Factor (Average Annual) = **0.25** lbs/mile

2. Potential to Emit (PTE) of PM/PM10 from Paved Roads:

Vehicle Type	Ave Weight of Vehicles* (tons)	Trip Number* (trips/yr)	Round Trip Distance* (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Grain Receiving	29	40,150	0.85	34,128	60.4%	17.53	22.2	4.33
DDGS Load Out	29	13,140	0.85	11,169	19.8%	5.74	7.28	1.42
Ethanol Load Out	29	12,410	0.85	10,549	18.7%	5.42	6.88	1.34
Denaturant Delivery	29	730	0.85	621	1.10%	0.32	0.40	0.08
Total				**56,466**	**100%**	**29.0**	**36.4**	**7.09**

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/yr) x Round Trip Distance (mile/trip)
Traffic Component (%) = VMT / Total VMT
Component Vehicle Weight = Ave. Weight of Vehicles (tons) x Traffic Component (%)
PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors (Average Annual) x 1 ton/2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source will use periodic sweeping to control the fugitive dust emissions.
The control efficiency from sweeping is assumed to be 50%.

PTE of PM after Control = 36.4 tons/yr x (1-50%) = **18.2 tons/yr**

PTE of PM10 after Control = 7.09 tons/yr x (1-50%) = **3.55 tons/yr**

Appendix A: Emission Calculations
PM/PM10 Emissions
From the the Cooling Tower (Insignificant Activity)

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

1. Process Description:

Type of Cooling Tower:	Induced Draft	
Circulation Flow Rate:	29,000	gal/min
Total Drift:	0.005%	of the circulating flow
Total Dissolved Solids:	2,500	ppm
Density:	8.345	lbs/gal

Note: The information above was provided by the cooling tower manufacturer for the same units located at a similar source.

2. Potential to Emit PM/PM10:

Assume all the dissolved solids become PM10 emissions and assume PM emissions are equal to PM10 emissions.

PTE of PM/PM10 (lbs/hr) = 45,000 gal/min x 60 min/hr x 0.005% x 8.345 lbs/gal x 2,500 ppm x 1/1,000,000 ppm = **1.82 lbs/hr**

PTE of PM/PM10 (tons/yr) = 2.82 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs = **7.9 tons/yr**

Appendix A: Emission Calculations
VOC and HAP Emissions
From Equipment Leaks

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

1. Fugitive VOC Emissions:

Equipment Component Source	Product	Component Count*	Emission Factor** (lbs/comp-hr)	Subpart VV Control Effectiveness*** (%)	Fugitive VOC Emissions (tons/yr)
Valves	Gas/Vapor	30	0.013134	87%	0.22
Valves	Light Liquid	15	0.008866	84%	0.09
Valves	Heavy Liquid	158	0.008866	84%	0.98
Pumps	Light Liquid	2	0.04378	69%	0.10
Pumps	Heavy Liquid	14	0.04378	69%	0.86
Pressure-Relief Valves	Gas/Vapor	4	0.2288	87%	0.52
Sampling Connections	All	18	0.033	0%	2.61
Open-Ended Lines	All	54	0.00374	0%	0.89
Connectors	All	650	0.004026	0%	11.46
Total					**17.73**

* Component count estimated by the source.

** Emission factors are from Protocol for Equipment leak Emission Estimates, EPA-453/R-95-017.

*** Control Effectiveness is from Protocol for Equipment leak Emission Estimates, EPA-453/R-95-017, Table 5-2.

Methodology

Fugitive VOC Emissions (tons/yr) = Component Count x Emission Factor (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs x (1-Control Effectiveness)

2. Fugitive HAP Emissions:

HAP	HAP Fraction*	Fugitive HAP Emissions (tons/yr)
Acetaldehyde	2.00E-04	3.55E-03
Methanol	2.00E-04	3.55E-03
Benzene	2.50E-03	4.43E-02
Carbon Disulfide	2.00E-05	3.55E-04
Cumene	1.00E-04	1.77E-03
Ethylbenzene	5.00E-05	8.87E-04
n-Hexane	5.00E-02	8.87E-01
Toluene	5.00E-03	8.87E-02
Xylenes	5.00E-04	8.87E-03
Total		**1.03**

* The HAP fractions for Acetaldehyde, Methanol, Formaldehyde, and Acrolein ware derived from similar plant stack testing and the remaining HAP fractions are for gasoline vapors.

Methodology

Fugitive HAP Emissions (tons/yr) = Fugitive VOC Emissions (tons/yr) x HAP Fraction

Appendix A: Emission Calculations
Limited PTE Summary

Company Name: Ceres Holdings, LLC
Address: 2800 W 300 N, Fowler, Indiana
FESOP: F007-23773-00018
Reviewer: ERG/JR
Date: 9-Nov-06

Potential To Emit before Control

Emission Units	PM	PM10	SO_2	NO_x	VOC	CO	Total HAPs
Boilers - Natural Gas	7.16	7.16	0.72	35.81	11.46	39.39	1.35
Boilers - Fuel Oil	17.9	17.9	372.4	147.3	21.5	50.1	3.51E-02
Grain Handling	1431.9	1431.9	-	-	-	-	-
Grain Handling - Fugitive	65.7	21.6	-	-	-	-	-
Fermentation & Distillation	0.08	0.08	0.01	0.55	1340.3	0.92	19.23
Dryers/EcoDry and Cooling Systems*	525.6	525.6	0.2	56.1	876.0	43.8	563.1
DDGS Handling and Loadout	156.4	156.4	-	-	-	-	-
DDGS Loadout - Fugitive	9.61	3.21	-	-	-	-	-
Ethanol Loadout and Flare	-	-	-	10.5	883.9	26.3	51.4
Paved Roads (Fugitive)	36.4	7.09	-	-	-	-	-
Cooling Tower	7.9	7.9	-	-	-	-	-
Storage Tanks**	-	-	-	-	N/A	-	Negligible
Leaks	-	-	-	-	30.5	-	1.03
Wet Cake Storage***	-	-	-	-	See Note	-	See Note
Other Insignificant Activities	1.00	1.00	-	-	1.00	-	-
Total PTE	**2259.8**	**2179.9**	**373.3**	**250.3**	**3164.7**	**160.6**	**636.1**

*Control efficiencies for the EcoDry systems were not provided by the source; therefore, the emission estimates are based on after control. However, it is assumed that the EcoDry system will get 95% PM/PM10 control. BACT is 98% control efficiency for VOC. PM/PM10 and VOC potential is estimated based on these control efficiencies.
** Emissions from the storage tanks were calculated by the Permittee using EPA TANKS software (version 4.09d) and have been verified.
*** The emissions from the DDGS production are the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.

Limited Potential To Emit after Control

Emission Units	PM	PM10	SO_2	NO_x	VOC	CO	Total HAPs
Boilers - Natural Gas	7.16	7.16	*	35.8	11.5	39.4	1.35
Boilers - Fuel Oil	*	*	90.4	*	*	*	Negligible
Grain Handling	24.6	24.6	-	-	-	-	-
Grain Handling - Fugitive	6.57	2.16	-	-	-	-	-
Fermentation & Distillation	0.08	0.08	0.01	0.55	26.9	0.92	0.40
Dryers/EcoDry and Cooling Systems	26.3	26.3	0.2	56.1	17.5	43.8	11.26
DDGS Handling and Loadout	1.41	1.41	-	-	-	-	-
DDGS Loadout - Fugitive	4.81	1.60	-	-	-	-	-
Ethanol Loadout and Flare	-	-	-	1.24	4.17	3.11	0.24
Paved Roads (Fugitive)	18.2	3.55	-	-	-	-	-
Cooling Tower	7.9	7.9	-	-	-	-	-
Storage Tanks**	-	-	-	-	7.76	-	Negligible
Leaks	-	-	-	-	17.73	-	1.03
Wet Cake Storage***	-	-	-	-	See Note	-	See Note
Other Insignificant Activities	1.00	1.00	-	-	1.00	-	-
Total PTE	**98.1**	**75.8**	**90.6**	**93.7**	**86.5**	**87.2**	**14.3**

* The NOx and CO emissions from burning Fuel Oil are accounted for as part of an equivalency limit. The input of natural gas to the boilers is limited to 1432.3 MMCF per twelve (12) consecutive month period. For the purpose of determining compliance with this limit, one gallon of No.2 fuel oil or biodiesel shall be considered equal to 5.77E-4 million cubic feet of natural gas equivalents, based on nitrogen oxide emissions. This usage limit also ensures that SO2 emissions from the boilers are less than 91.0 tons per twelve (12) consecutive month period and CO emissions are less than 39.4 tons per twelve (12) consecutive month period.
** Emissions from the storage tanks were calculated by the Permittee using EPA TANKS software (version 4.09d) and have been verified.
*** The emissions from the DDGS production are the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.