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: July 22, 2005

RE: Iroquois Bio-Energy Company, LLC / 073-20945-00037

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER.dot 1/10/05

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Mr. Keith A. Gibson
Iroquois Bio-Energy Company, LLC

July 22, 2005

P.O. Box 218
Rensselaer, Indiana 47978

Re: 073-20945-00037
First Significant Permit Revision to
FESOP 073-16720-00037

Dear Mr. Gibson:

Iroquois Bio-Energy Company, LLC was issued a permit on January 8, 2004 for an ethanol production plant. A letter requesting changes to this permit was received on March 11, 2005. Pursuant to the provisions of 326 IAC 2-8-11.1(f), a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document.

The revision consists of changes in control devices, changes in capacities and identification number of the emission units, and additional throughput limitations to maintain the FESOP status.

The following construction conditions are applicable to the proposed project:

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

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

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

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

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

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

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Yu-Lien Chu, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7871 to speak directly to Ms. Chu. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204, or call (800) 451-6027 and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed By:
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

ERG/YC

cc: File - Jasper County
Jasper County Health Department
Air Compliance Section Inspector - Wanda Stanfield
Compliance Data Section
Administrative and Development
Technical Support and Modeling - Michele Boner

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FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)

Iroquois Bio-Energy Company, LLC
751 W. State Road 114
Rensselaer Indiana 47978-7265

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

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

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

Operation Permit No.: 073-16720-00037	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: January 8, 2004 Expiration Date: January 8, 2009

First Significant Permit Revision No.: 073-20945-00037	Pages Affected: 7-11, 20, 24, 27-63, 67-70
Issued by: Original Signed By: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: July 22, 2005

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

SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates an ethanol manufacturing plant.

Authorized Individual:	General Manager
Source Address:	751 W. State Road 114, Rensselaer, Indiana 47978-7265
Mailing Address:	P. O. Box 218, Rensselaer, Indiana 47978-0218
SIC Code:	2869
County Location:	Jasper County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

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

(a) One (1) grain receiving and storage operation, identified as P20, to be constructed in 2005, with a maximum capacity of 420 tons of grain per hour, controlled by baghouse C20, exhausting through stack S20, and consisting of the following:

(1) One (1) grain unloading operation.

(2) One (1) elevator leg.

(3) One (1) storage bin fill conveyor.

(4) Four (4) grain storage silos, with a total storage capacity of less than 1,000,000 bushels.

(5) One (1) storage bin emptying conveyor.

(6) One (1) day storage bin, with a maximum capacity of 5,000 bushels.

(b) Two (2) hammermills, identified as P30, to be constructed in 2005, each with a maximum capacity of 100 tons of grain per hour, controlled by baghouse C30, and exhausting through stack S30.

(c) One (1) Distiller's Dried Grains and Solubles (DDGS) cooling system, identified as P70, to be constructed in 2005, with a maximum throughput rate of 20 tons of DDGS per hour, equipped with an integral cyclone and controlled by baghouse C70, and exhausting through stack S70.

(d) One (1) DDGS loadout operation, identified as P90, to be constructed in 2005, with a maximum throughput rate of 400 tons/hr, controlled by baghouse C90, and exhausting through stack S90.

(e) One (1) fermentation process, identified as P40, to be constructed in 2005, with a maximum throughput rate of 6,500 gallons per hour, consisting of four (4) fermenters and one (1) beer well system, controlled by a CO_2 scrubber C40, and exhausting through stack S40.

(f) One (1) recuperative thermal oxidizer/heat recovery steam generator, identified as C10, to be constructed in 2005, using natural gas and process waste gases from the dryers as fuels, with a maximum heat input capacity of 125 MMBtu/hr, and exhausting through stack S10.

(g) One (1) mashing, cooking and liquefication operation, identified as P10, to be constructed in 2005, with a maximum wet dryer feed rate of 48 tons of wet cake (with 65% water) per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, consisting of the following:

(1) Meal conveying operations.

(2) One (1) mash mixer, where process water and/or hot water is added to meal to form mash.

(3) Two (2) slurry tanks, where ammonia is added to mash as needed to adjust pH levels, each with a maximum capacity of 16,000 gallons.

(4) One (1) cook tube, where steam is injected to sterilize mash and gelatinize starch, with a maximum capacity of 5,000 gallons.

(5) One (1) flash tank, with a maximum capacity of 2,000 gallons.

(6) One (1) receiver tank.

(7) One (1) yeast tank, with a maximum capacity of 21,000 gallons.

(h) One (1) distillation and dehydration operation, to be constructed in 2005, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, and consisting of the following:

(1) One (1) beer column.

(2) One (1) side stripper.

(3) One (1) rectifier column.

(4) One (1) 190 proof condenser.

(5) Three (3) molecular sieves.

(6) One (1) 200 proof condenser.

(7) Three (3) centrifuges.

(8) One (1) centrate storage tank, with a maximum capacity of 990 gallons.

(9) Eight (8) evaporators.

(i) Two (2) natural gas fired DDGS dryers in series, identified as Dryers A and B, each with a maximum heat input capacity of 42 MMBtu/hr and a maximum throughput rate of 20 tons of DDGS per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, and exhausting through stack S10.

(j) One (1) ethanol loading terminal for both trucks and railcars, identified as P50, constructed in 2005, with a maximum loading rate of 36,000 gallons per hour for truck loading and a maximum loading rate of 72,000 gallons per hour for railcar loading. The truck loading process is controlled by an open flare C50, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausting through stack S50.

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

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

(a) Combustion source flame safety purging on startup.

(b) A gasoline fuel transfer dispensing operation handling less than or equal to 1,300 gallons per day and filling storage tanks having a capacity equal to or less than 10,500 gallons.

(c) A petroleum fuel other than gasoline dispensing facility, having a storage tank capacity less than or equal to 10,500 gallons, and dispensing 3,500 gallons per day or less.

(d) Cleaners and solvents characterized as:

(1) having a vapor pressure equal to or less than two (2.0) kilo Pascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch) measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or

(2) having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit);

the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.

(e) One (1) process cooling tower, identified as P80, with a maximum water circulation rate of 1,200,00 gallons per hour, consisting of four (4) cells.

(f) Blowdown for any of the following:

(1) Sight glass.

(2) Boilers.

(3) Cooling tower.

(4) Compressors.

(5) Pumps.

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

(h) Heat exchanger cleaning and repair.

(i) Paved roads and parking lots with public access.

(j) Diesel fired emergency generators not exceeding 1,600 horsepower, including one (1) emergency diesel fired water pump, identified as EP-16, with a maximum power output of 190 hp.

(k) Filter or coalescer media changeout.

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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) Two (2) final product storage tanks, identified as TK61 and TK62, constructed in 2005, which store denatured ethanol, each with a maximum capacity of 500,000 gallons, and equipped with internal floating roofs.

(2) Two (2) shift tanks, identified as TK63 and TK65, constructed in 2005, which store 190 and 200 proof ethanol, each with a maximum capacity of 100,000 gallons, and equipped with internal floating roofs.

(3) One (1) denaturant (gasoline) storage tank, identified as TK64, constructed in 2005, which stores gasoline, with a maximum capacity of 100,000 gallons, and equipped with an internal floating roof.

(4) One (1) additive tank, identified as Additive TK, constructed in 2005, which stores corrosion inhibitor, with a maximum capacity of 2,301 gallons.

(5) One (1) thin stillage tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(6) One (1) syrup tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(7) One (1) cook water tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(8) Two (2) liquefaction tanks, constructed in 2005, each with a maximum capacity of 51,000 gallons.

(9) One (1) whole stillage tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(10) Two (2) methanators, used to clean up the contact waste water that will be recirculated back into the cook tank, exhausting to the DDGS dryers as supplement fuel. When the dryers are down, methane emissions from the methanators are controlled by flare C60, which has a maximum heat input capacity of 3.2 MMBtu/hr and exhausts through stack S60.

(11) Heat exchangers, identified as mash coolers, which are part of the mashing, cooking and liquefaction operations.

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

This 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 Permit No Defense [IC 13]

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

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

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

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

This permit is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date.

B.4 Enforceability [326 IAC 2-8-6]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

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

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

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

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

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

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

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

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

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

B.9 Compliance Order Issuance [326 IAC 2-8-5(b)]

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

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

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain

certification by an authorized individual of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.

(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 in letter form no later than July 1 of each year to:

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

(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, that IDEM, OAQ may require to determine the compliance status of the source.

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

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

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than thirty (30) days prior to commencement of operation of the facility, 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.

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

(b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.

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

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

B.13 Emergency Provisions [326 IAC 2-8-12]

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

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

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

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

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

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;
Telephone No.: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section) or,
Telephone No.: 317-233-5674 (ask for Compliance Section)
Facsimile No.: 317-233-5967

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

Indiana Department of Environmental Management

Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

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

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

(A) A description of the emergency;

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

(C) Corrective actions taken.

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

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

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

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

(e) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) That this permit contains a material mistake.

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

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

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

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

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

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

Request for renewal shall be submitted to:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(3) The changes do not result in emissions which exceed the emissions allowable under 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

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 which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-8-15(b) through (d) and makes such records available, upon reasonable request, to public review.

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

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

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

B.19 Permit Revision Requirement [326 IAC 2-8-11.1]
A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)] [IC 13-14-2-2][IC13-30-3-1]
Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

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

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

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

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

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

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

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

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:
Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

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

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

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

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

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

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

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314][326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

C.1 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 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) 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.

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

C.2 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.3 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.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]

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

C.5 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.6 Operation of Equipment [326 IAC 2-8-5(a)(4)]

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

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]

All demolition projects require notification, whether or not asbestos is present.

(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.

(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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) Procedures for Asbestos Emission Control

The Permittee shall comply with the applicable emission control procedures in 326 IAC

14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 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 or demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana accredited asbestos inspector is not federally enforceable.

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

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

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

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

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

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

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

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the source 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 shall be implemented when operation begins. If required by Section D, the Permittee shall be responsible

for installing any necessary equipment and initiating any required monitoring related to that equipment.

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

C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing performed 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 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)] [326 IAC 2-8-5(1)]

(a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ("2%) of full scale reading.

(b) Whenever a condition in this permit requires the measurement of a temperature and flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ("2%) of full scale reading.

(c) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other 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 68.215]

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

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4] [326 IAC 2-8-5]

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

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1(1).

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

C.16 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required data, reports and support information 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 kept 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.17 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

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

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

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

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

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

(e) The first report covered the period commencing on the date of issuance of the original FESOP and ended on the last day of the reporting period. All subsequent reporting periods shall be based on calendar years.

Stratospheric Ozone Protection

C.18 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

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

(a) One (1) grain receiving and storage operation, identified as P20, to be constructed in 2005, with a maximum capacity of 420 tons of grain per hour, controlled by baghouse C20, exhausting through stack S20, and consisting of the following:

(1) One (1) grain unloading operation.

(2) One (1) elevator leg.

(3) One (1) storage bin fill conveyor.

(4) Four (4) grain storage silos, with a total storage capacity of less than 1,000,000 bushels.

(5) One (1) storage bin emptying conveyor.

(6) One (1) day storage bin, with a maximum capacity of 5,000 bushels.

(b) Two (2) hammermills, identified as P30, to be constructed in 2005, each with a maximum capacity of 100 tons of grain per hour, controlled by baghouse C30, and exhausting through stack S30.

(c) One (1) Distiller's Dried Grains and Solubles (DDGS) cooling system, identified as P70, to be constructed in 2005, with a maximum throughput rate of 20 tons of DDGS per hour, equipped with an integral cyclone and controlled by baghouse C70, and exhausting through stack S70.

(d) One (1) DDGS loadout operation, identified as P90, to be constructed in 2005, with a maximum throughput rate of 400 tons/hr, controlled by baghouse C90, and exhausting through stack S90.

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

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

D.1.1 PM Emissions [326 IAC 2-2]

The PM emissions from the following units shall not exceed the emission limits listed in the table below.

Unit ID	Unit Description	PM Limit (lbs/hr)
P20	Grain Receiving and Storage	1.34
P30	Hammermills	0.60
P70	DDGS Cooling System	0.38
P90	DDGS Loadout	0.16

Combined with the PM emissions from thermal oxidizer/heat recovery steam generator (C10), flare C50, unpaved roads, and insignificant activities, the PM emissions from the entire source are limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

D.1.2 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2]

(a) PM10 emissions from these units shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	PM10 Limit (lbs/hr)
P20	Grain Receiving and Storage	1.34
P30	Hammermills	0.60
P70	DDGS Cooling System	0.38
P90	DDGS Loadout	0.16

(b) The DDGS production rate shall not exceed 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) VOC emissions from the DDGS cooling system (P70) shall not exceed 0.1 pounds per ton of DDGS produced.

(d) Total HAP emissions from the DDGS cooling system (P70) shall not exceed 0.01 pounds per ton of DDGS produced.

Combined with the emissions from other emission units, the PM10 and VOC emissions from the entire source are each limited to less than 100 tons/yr, the HAPs 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.1.3 Particulate Emission Limitations [326 IAC 6-3-2]

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:

Unit ID	Process Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
P20	Grain Receiving and Storage Operation	420	66.9
P30	Each of the Hammermills	100	51.3
P70	DDGS Cooling System	20	30.5
P90	DDGS Loadout Operation	400	66.3

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 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

D.1.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.1.5 PM and PM10 Control

In order to comply with Conditions D.1.1, D.1.2(a), and D.1.3, 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 ID	Process Description	Baghouse ID
P20	Grain Receiving and Storage Operation	C20
P30	Each of the Hammermills	C30
P70	DDGS Cooling System	C70
P90	DDGS Loadout Operation	C90

D.1.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.2(c) and (d), the Permittee shall perform VOC and HAP testing for the DDGS cooling system (P70) 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.1.7 Visible Emissions Notations

(a) Visible emission notations of the baghouse stack exhausts (stacks S20, S30, S70, and S90) 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) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.1.8 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the grain receiving and storage operation (P20), the hammermills (P30), the DDGS cooling system (P70), and the DDGS loadout operation (P90) 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 3.0 to 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C-Compliance Response Plan - Preparation, Implementation, Records and Reports. 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 - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other 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.1.9 Baghouse Inspections

An inspection shall be performed each calendar quarter of all baghouses controlling the the grain receiving and storage operation (P20), the hammermills (P30), the DDGS cooling system (P70), and theDDGS loadout operation (P90). Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.1.10 Broken or Failed Bag Detection

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetables not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 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.

(b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then 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).

D.1.11 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. 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 - Compliance Response Plan -Preparation, Implementation, Records, and Reports, 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.1.12 Record Keeping Requirements

(a) To document compliance with Condition D.1.2(b), the Permittee shall maintain monthly records of the DDGS produced.

(b) To document compliance with Condition D.1.7, the Permittee shall maintain daily records of visible emission notations of the baghouse stack exhausts.

(c) To document compliance with Condition D.1.8, the Permittee shall maintain daily records of the total static pressure drop during normal operation.

(d) To document compliance with Condition D.1.9, the Permittee shall maintain records of the results of the inspections required under Condition D.1.9.

(e) To document compliance with Condition D.1.4, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

(f) 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 Condition D.1.2(b) 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 an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 FACILITY OPERATION CONDITIONS

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

(e) One (1) fermentation process, identified as P40, to be constructed in 2005, with a maximum throughput rate of 6,500 gallons per hour, consisting of four (4) fermenters and one (1) beer well system, controlled by a CO_2 scrubber C40, and exhausting through stack S40.

(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.2.1 VOC and HAP Emissions [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following for the fermentation process:

(a) The ethanol production rate shall not exceed 50 million gallons (MMgal) per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) VOC emissions shall not exceed 1.8 pounds per 1,000 gallons of ethanol produced.

(c) Single HAP emissions shall not exceed 0.245 pounds per 1,000 gallons of ethanol produced.

(d) Total HAP emissions shall not exceed 0.271 pounds per 1,000 gallons of ethanol produced.

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

D.2.2 Best Available Control Technology [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (General Reduction Requirements), the Permittee shall control the fermentation process with a BACT (Best Available Control Technology) which has been determined to be the following:

(a) The VOC emissions from the fermentation process shall be controlled by wet scrubber C40.

(b) The control efficiency for the wet scrubber C40 shall be at least 98%; or the outlet VOC concentration shall not exceed 20 ppmv when the inlet VOC concentration is lower than 200 ppmv.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) VOC emissions from wet scrubber C40 shall not exceed 1.8 pounds per 1,000 gallons of ethanol produced.

D.2.3 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 this facility and its control device.

Compliance Determination Requirements

D.2.4 VOC and HAP Control

In order to comply with Conditions D.2.1 and D.2.2, wet scrubber C40 shall be in operation and control emissions from the fermentation process at all times that this process is in operation.

D.2.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after commencing operation, the Permittee shall conduct a performance test to perform VOC (including emission rate and overall control efficiency) and HAP testing for scrubber C40 utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.2.6 Parametric Monitoring

The Permittee shall monitor and record the flow rate of scrubber C40 at least once per day when the fermentation process is in operation. When for any one reading the flow rate of the scrubber is less than the minimum of 35 gallons per minute, or a minimum flow established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Implementation, Preparation, Records, and Reports. 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 - Compliance Response Plan - Preparation, Implementation, Records, and Reports shall be considered a deviation from this permit.

The instruments used for determining the flow rate shall comply with Section C - Pressure Gauge and Other 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.2.7 Scrubber Inspections

An external inspection shall be performed each calendar quarter of the scrubber controlling the fermentation process. Inspections required by this condition shall not be performed in consecutive months.

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

D.2.8 Record Keeping Requirements

(a) To document compliance with Condition D.2.1(a), the Permittee shall maintain monthly records of the total ethanol production rate.

(b) To document compliance with Condition D.2.6, the Permittee shall maintain once per day records of flow rate for scrubber C40 during normal operation.

(c) To document compliance with Condition D.2.7, the Permittee shall maintain records of the results of the inspections required under Condition D.2.7.

(d) To document compliance with Condition D.2.3, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

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

D.2.9 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1(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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3 FACILITY OPERATION CONDITIONS

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

(f) One (1) recuperative thermal oxidizer/heat recovery steam generator, identified as C10, to be constructed in 2005, using natural gas and process waste gases from the dryers as fuels, with a maximum heat input capacity of 125 MMBtu/hr, and exhausting through stack S10.

(g) One (1) mashing, cooking and liquefication operation, identified as P10, to be constructed in 2005, with a maximum wet dryer feed rate of 48 tons of wet cake (with 65% water) per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, consisting of the following:

(1) Meal conveying operations.

(2) One (1) mash mixer, where process water and/or hot water is added to meal to form mash.

(3) Two (2) slurry tanks, where ammonia is added to mash as needed to adjust pH levels, each with a maximum capacity of 16,000 gallons.

(4) One (1) cook tube, where steam is injected to sterilize mash and gelatinize starch, with a maximum capacity of 5,000 gallons.

(5) One (1) flash tank, with a maximum capacity of 2,000 gallons.

(6) One (1) receiver tank.

(7) One (1) yeast tank, with a maximum capacity of 21,000 gallons.

(h) One (1) distillation and dehydration operation, to be constructed in 2005, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, and consisting of the following:

(1) One (1) beer column.

(2) One (1) side stripper.

(3) One (1) rectifier column.

(4) One (1) 190 proof condenser.

(5) Three (3) molecular sieves.

(6) One (1) 200 proof condenser.

(7) Three (3) centrifuges.

(8) One (1) centrate storage tank, with a maximum capacity of 990 gallons.

(9) Eight (8) evaporators.

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

(i) Two (2) natural gas fired DDGS dryers in series, identified as Dryers A and B, each with a maximum heat input capacity of 42 MMBtu/hr and a maximum throughput rate of 20 tons of DDGS per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, and exhausting through stack S10.

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

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

D.3.1 PM Emissions [326 IAC 2-2]

The PM emissions from recuperative thermal oxidizer/heat recovery steam generator C10, which is used to control the DDGS dryers and distillation and dehydration process, shall not exceed 0.2 pounds per ton of DDGS produced.

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

D.3.2 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2]

(a) The DDGS production rate shall not exceed 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) PM10 emissions shall not exceed 3.70 lbs/hr or 0.2 pounds per ton of DDGS produced.

(c) VOC emissions shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced.

(d) SO_2 emissions shall not exceed 8.52 lbs/hr or 0.46 pounds per ton of DDGS produced.

(e) CO emissions shall not exceed 22.2 lbs/hr or 1.2 pounds per ton of DDGS produced.

(f) NOx emissions shall not exceed 20.9 lbs/hr.

(g) Total HAP emissions shall not exceed 0.39 lbs/hr or 0.021 pounds per ton of DDGS produced.

Combined with the emissions from other emission units, the PM10, VOC, SO_2, CO, and NOx emissions from the entire source are each limited to less than 100 tons/yr, and the HAPs 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.3.3 Best Available Control Technology [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (General Reduction Requirements), the Permittee shall control the VOC emissions from the DDGS dryers and the distillation and dehydration process with a BACT (Best Available Control Technology) which has been determined to be the following:

(a) The VOC emissions from the distillation and dehydration process and DDGS dyers shall be controlled by recuperative thermal oxidizer/heat recovery steam generator C10.

(b) The destruction efficiency for recuperative thermal oxidizer/heat recovery steam generator C10 shall be at least 98%.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10) shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced.

D.3.4 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to recuperative thermal oxidizer/heat recovery steam generator C10, except when otherwise specified in 40 CFR Part 60, Subpart Db.

D.3.5 NOx Emissions [326 IAC 12-1][40 CFR 60, Subpart Db]

(a) Pursuant to 40 CFR 60.44b, the NOx emissions from thermal oxidizer/heat recovery steam generator C10 shall not exceed 0.1 lbs/MMBtu.

(b) Pursuant to 40 CFR 60.48b(g)(2), the Permittee shall monitor the operating conditions for thermal oxidizer/heat recovery steam generator C10 and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to 40 CFR 60.49b(c).

D.3.6 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.3.7 except when otherwise specified in 40 CFR 60, Subpart VV.

D.3.7 New Source Performance Standards [326 IAC 12] [40 CFR 60]

Pursuant to 326 IAC 12 (40 CFR 60, Subpart VV) the Permittee shall satisfy the requirements of 40 CFR 60.482 through 60.487, as applicable and listed in Section E.1, for equipment leaks from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.

D.3.8 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from the 125 MMBtu per hour heat input recuperative thermal oxidizer/heat recovery steam generator (C10) shall be limited to 0.31 pounds per MMBtu heat input.

The limit was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

D.3.9 Particulate Emission Limitations [326 IAC 6-3-2]

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:

Process Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Mashing, Cooking, and Liquefaction Operation	42	44.2
Each of the DDGS Dryers	20	30.5

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 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

D.3.10 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 its control devices.

Compliance Determination Requirements

D.3.11 VOC and HAP Control

In order to comply with Conditions D.3.2 and D.3.3, the recuperative thermal oxidizer/heat recovery steam generator (C10) shall be in operation and control emissions from the DDGS dryers and the distillation and dehydration process at all times that these units are in operation.

D.3.12 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11] [40 CFR 60 Subpart Db] [326 IAC 2-2]

(a) Pursuant to 40 CFR 60.46(b)(c) and in order to demonstrate compliance with Conditions D.3.2(f) and D.3.5(a), the Permittee shall perform NOx testing for thermal oxidizer/heat recovery steam generator C10 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

(b) In order to demonstrate compliance with Conditions D.3.1, D.3.2, D.3.3, D.3.8, and D.3.9, and the Permittee shall perform PM, PM10, VOC (including emission rate and overall control efficiency), SO_2, CO, and HAP testing for recuperative thermal oxidizer/heat recovery steam generator C10 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. 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.3.13 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from stack S10 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.3.14 Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the recuperative thermal oxidizer/heat recovery steam generator C10 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 1,450E F.

(b) The Permittee shall determine the hourly average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.3.2 and D.3.3, as approved by IDEM.

(c) 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.

D.3.15 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.3.2 and D.3.3, as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the recuperative thermal oxidizer/heat recovery steam generator (C10) 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.

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

D.3.16 Record Keeping Requirements

(a) To document compliance with Condition D.3.2(a), the Permittee shall maintain monthly records of the weight of DDGS produced.

(b) To document compliance with Condition D.3.5, the Permittee shall maintain records of the operating parameters as specified in a plan submitted pursuant to 40 CFR 60.49b(c) for the recuperative thermal oxidizer/heat recovery steam generator (C10). These records shall be sufficient to estimate the NOx emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10).

(c) To document compliance with Condition D.3.13, the Permittee shall maintain records of daily visible emission notations of the stack S10.

(d) To document compliance with Condition D.3.14, the Permittee shall maintain continuous temperature records for the thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(e) To document compliance with Condition D.3.15, the Permittee shall maintain daily records of the duct pressure or fan amperage for the thermal oxidizer/heat recovery steam generator.

(f) To document compliance with Condition D.3.10, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

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

D.3.17 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.2(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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

D.3.18 Recordkeeping Requirements [40 CFR 60, Subpart Db] [326 IAC 12]

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

(b) Pursuant to 40 CFR 60.49b(g), the Permittee shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date.

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

(3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.

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

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

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

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

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

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

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

D.3.19 Reporting Requirements [40 CFR 60, Subpart Db] [326 IAC 12]

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

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

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

(d) Pursuant to 40 CFR 60.49b(i), the Permittee shall submit reports containing the information recorded under 40 CFR 60.49b(g) and Condition D.4.24(b).

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

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

SECTION D.4 FACILITY OPERATION CONDITIONS

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

(j) One (1) ethanol loading terminal for both trucks and railcars, identified as P50, to be constructed in 2005, with a maximum loading rate of 36,000 gallons per hour for truck loading and a maximum loading rate of 72,000 gallons per hour for railcar loading. The truck loading process is controlled by an open flare C50, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausting through stack S50.

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

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following emission limits for the ethanol loading terminal:

(a) The total ethanol loadout rate (including trucks and railcars) shall not exceed 50 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The truck loadout process shall not exceed 2.5 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The VOC/HAP emissions from the flare C50 shall not exceed 0.69 lbs/hr.

(c) CO emissions from flare C50 shall not exceed 0.13 lbs/kgal.

(d) NOx emissions from flare C50 shall not exceed 0.10 lbs/kgal.

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

D.4.2 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall collect and control the VOC emissions from the ethanol loading terminal, when loading ethanol to trucks, 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 terminal shall be collected and controlled by open flare C50 when loading denatured ethanol to trucks.

(b) The overall control efficiency (including destruction efficiency and capture efficiency) for flare C50 shall be at least 98%.

(c) The VOC emissions from the flare C50 shall not exceed 0.69 lbs/hr.

D.4.3 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.4.4 except when otherwise specified in 40 CFR 60, Subpart VV.

D.4.4 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.4.5 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.4.6 VOC and HAP Control

In order to comply with Conditions D.4.1(c) and D.4.2, flare C50 shall be in operation and control emissions from the ethanol loading terminal at all times when this unit is loading ethanol to trucks.

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

D.4.7 Flare Pilot Flame

In order to comply with Conditions D.4.1 and D.4.2, the Permittee shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading terminal is in operation and is loading ethanol to trucks.

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

D.4.8 Record Keeping Requirements

(a) To document compliance with Condition D.4.1(a), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out.

(b) To document compliance with Condition D.4.1(b), the Permittee shall maintain monthly records of the amount of denatured ethanol loaded out to trucks.

(c) To document compliance with Condition D.4.8, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading terminal is in operation and is loading ethanol to trucks.

(d) To document compliance with Condition D.4.5, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

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

D.4.9 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.4.1(a) and (b) 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.5 FACILITY OPERATION CONDITIONS

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

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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:

(10) Two (2) methanators, used to clean up the contact waste water that will be recirculated back into the cook tank, exhausting to the DDGS dryers as supplement fuel. When the dryers are down, methane emissions from the methanators are controlled by flare C60, which has a maximum heat input capacity of 3.2 MMBtu/hr and exhausts through stack S60.

(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.5.1 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP), the operating hours of the biomethanator flare EP-15 shall be less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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

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

D.5.2 Record Keeping Requirements

(a) To document compliance with Condition D.5.1, the Permittee shall maintain monthly records of the operating hours of the biomethanator flare EP-15.

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

D.5.3 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.5.1 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 an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.6 FACILITY OPERATION CONDITIONS

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

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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) Two (2) final product storage tanks, identified as TK61 and TK62, constructed in 2005, which store denatured ethanol, each with a maximum capacity of 500,000 gallons, and equipped with internal floating roofs.

(2) Two (2) shift tanks, identified as TK63 and TK65, constructed in 2005, which store 190 and 200 proof ethanol, each with a maximum capacity of 100,000 gallons, and equipped with internal floating roofs.

(3) One (1) denaturant (gasoline) storage tank, identified as TK64, constructed in 2005, which stores gasoline, with a maximum capacity of 100,000 gallons, and equipped with an internal floating roof.

(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 New Source Performance Standards [326 IAC 12][40 CFR 60 Subpart Kb]

Pursuant to 40 CFR Part 60.112b(a)(1), the Permittee shall equip storage tanks TK 61 through TK 65 with an internal floating roof meeting the following specifications:

(a) 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.

(b) 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:

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

(2) 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.

(3) 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.

(c) 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.

(d) 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.

(e) 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.

(f) 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.

(g) 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.

(h) 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.

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

D.6.2 New Source Performance Standards [326 IAC 12][40 CFR 60 Subpart VV]

Pursuant to 326 IAC 12 (40 CFR 60, Subpart VV) the Permittee shall satisfy the requirements of 40 CFR 60.482 through 60.487, as applicable, for equipment leaks from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.

Compliance Determination Requirements

D.6.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11][326 IAC 12][40 CFR 60.113b(a)(1)]

After installing the internal floating roofs required in Condition D.1.1, the Permittee shall:

(a) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel. 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 Permittee shall repair the items before filling the storage vessel.

(b) For vessels equipped with a double-seal system, the Permittee shall:

(1) Visually inspect the vessel as specified in part (c) and part (d) of this Condition; or

(2) Visually inspect the vessel as specified in part (d) of this Condition only, at least once every five years.

(c) For storage vessels equipped with a liquid-mounted or mechanical shoe primary seal, or for vessels equipped with a double-seal system where the Permittee elects to do so:

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 within 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 OAQ in the inspection report required in 40 CFR 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.

This inspection shall be repeated at least once every 12 months.

(d) For all storage vessels:

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.

This inspection shall be repeated at least once every 10 years, unless more frequent inspections are required elsewhere in this permit.

D.6.4 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11][326 IAC 12][40 CFR 60 Subpart VV]

The Permittee shall conduct performance tests for equipment leaks in accordance with 40 CFR 60 Subpart VV and Condition E.1.1.9, as applicable.

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

D.6.5 Parametric Monitoring [326 IAC 12][40 CFR 60 Subpart VV]

The Permittee shall develop and conduct a monitoring program for this facility addressing equipment leaks in accordance with 40 CFR 60 Subpart VV and Conditions E.1.1 through E.1.7, as applicable.

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

D.6.6 NSPS Reporting Requirements [40 CFR 60.113b(a)(5)][40 CFR 60.115b(a)(3) and (4)]

(a) The Permittee shall notify OAQ in writing at least 30 days prior to

(1) an initial filling, or

(2) a refilling after a complete emptying

of storage tanks TK 61 through TK 65 to afford OAQ the opportunity to have an observer present.

(b) If the inspection is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify OAQ 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.

(c) If any of the conditions described in Condition D.6.3(c) are detected during the annual visual inspection, a report shall be furnished to OAQ 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.

(d) After each inspection required by Condition D.6.3(d) 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 Condition D.6.3(d), a report shall be furnished to OAQ within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications and list each repair made.

D.6.7 Record Keeping Requirements [40 CFR 115b(a)]

(a) After installing control equipment in accordance with Condition D.6.1, the Permittee shall keep a record of each inspection performed as required by Condition D.6.3. 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).

(b) For storage tanks TK 61 through TK 65, the Permittee shall keep readily-accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel, for the life of each vessel.

(c) The Permittee shall maintain records for equipment leaks within this facility in accordance with 40 CFR 60 Subpart VV, as applicable.

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

D.6.8 Reporting Requirements [40 CFR 115b(a)(1)]

After installing control equipment in accordance with Condition D.6.1, the Permittee shall furnish OAQ with a report that describes the control equipment and certifies that the control equipment meets the specifications of 40 CFR 60.112b(a)(1) and 40 CFR 60.113b(a)(1). This report shall be an attachment to the notification required by Condition D.6.6.

SECTION D.7 FACILITY OPERATION CONDITIONS

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

(a) Combustion source flame safety purging on startup.

(b) A gasoline fuel transfer dispensing operation handling less than or equal to 1,300 gallons per day and filling storage tanks having a capacity equal to or less than 10,500 gallons.

(c) A petroleum fuel other than gasoline dispensing facility, having a storage tank capacity less than or equal to 10,500 gallons, and dispensing 3,500 gallons per day or less.

(d) Cleaners and solvents characterized as:

(1) having a vapor pressure equal to or less than two (2.0) kilo Pascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch) measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or

(2) having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit);

the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.

(e) One (1) process cooling tower, identified as P80, with a maximum water circulation rate of 1,200,00 gallons per hour, consisting of four (4) cells.

(f) Blowdown for any of the following:

(1) Sight glass.

(2) Boilers.

(3) Cooling tower.

(4) Compressors.

(5) Pumps.

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

(h) Heat exchanger cleaning and repair.

(j) Diesel fired emergency generators not exceeding 1,600 horsepower, including one (1) emergency diesel fired water pump, identified as EP-16, with a maximum power output of 190 hp.

(k) Filter or coalescer media changeout.

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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:

(6) One (1) syrup tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(7) One (1) cook water tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(8) Two (2) liquefaction tanks, constructed in 2005, each with a maximum capacity of 51,000 gallons.

(9) One (1) whole stillage tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(11) Heat exchangers, identified as mash coolers, which are part of the mashing, cooking and liquefaction operations.

(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)]

There are no specific state or federal rules applicable to these emission units.

SECTION E.1 40 CFR 60, Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

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

E.1.1 Standards: Pumps in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-2 (Standards: Pumps in Light Liquid Service), the Permittee shall comply with the following requirements:

(a) Each pump in light liquid service shall:

(1) be monitored monthly to detect leaks by the methods specified in Condition E.1.10, except as provided in this condition; and

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

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. If there are indications of liquids dripping from the pump seal, a leak is detected.

(c) 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 Condition E.1.9. 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 Condition E.1.1(a), provided the following requirements are met:

(1) Each dual mechanical seal system is:

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

(B) 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 Condition E.1.8; or

(C) 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) The following requirements are met:

(A) Each sensor as described in Condition E.1.1(d)(3) is checked daily or is equipped with an audible alarm;

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

(6) 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 Condition E.1.1(d)(5)(B), a leak is detected. 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 Condition E.1.9. A first attempt at repair shall be made no later than five (5) calendar days after each leak is detected.

(e) Any pump that is designated, as described in Condition E.1.11(d)(1) and (d)(2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Conditions E.1.1(a), (c), and (d) 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 Condition E.1.10(b), and

(3) Is tested for compliance with Condition E.1.1(e)(2) 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 Condition E.1.8, it is exempt from Conditions E.1.1(a) through (e).

(g) Any pump that is designated, as described in Condition E.1.11(e)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of Conditions E.1.1(a) and (d)(4) through (d)(6) if:

(1) The Permittee demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Condition E.1.1(a); and

(2) The Permittee 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 Condition E.1.1(c) 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 Conditions E.1.1(a)(2) and (d)(4), and the daily requirements of Condition E.1.1(d)(5), provided that each pump is visually inspected as often as practicable and at least monthly.

E.1.2 Standards: Pressure Relief Devices in Gas/Vapor Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-4 (Standards: Pressure Relief Devices in Gas/Vapor Service), the Permittee shall comply with the following requirements:

(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 Condition E.1.9(b).

(b) 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 five (5) calendar days after the pressure release, except as provided in Condition E.1.8. No later than five (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 Condition E.1.9(b).

(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 Condition E.1.7 is exempted from the requirements of Conditions E.1.2(a) and (b).

(d) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of Conditions E.1.2(a) and (b), provided after each pressure release, a new rupture disk is 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 Condition E.1.8.

E.1.3 Standards: Sampling Connection Systems [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-5 (Standards: Sampling Connection Systems), the Permittee shall comply with the following requirements:

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system. 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 Condition E.1.3(a) shall comply with the following requirements:

(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 Condition E.1.7; or

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

(A) 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;

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

(C) 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 Conditions E.1.3(a) and (b).

E.1.4 Standards: Open-Ended Valves or Lines [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-6 (Standards: Open-Ended Valves or Lines), the Permittee shall comply with the following requirements:

(a) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. 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 Condition E.1.4(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 Conditions E.1.4(a), (b) and (c).

(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 Conditions E.1.4(a) through (c) are exempt from the requirements of Conditions E.1.4(a) through (c).

E.1.5 Standards: Valves in Gas/Vapor Service and in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-7 (Standards: Valves in Gas/Vapor Service and in Light Liquid Service), the Permittee shall comply with the following requirements:

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in Condition E.1.9(a) and shall comply with Conditions E.1.5(b) through (e), except as provided in Conditions E.1.5(f), (g), and (h).

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

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

(d) 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 Condition E.1.8. A first attempt at repair shall be made no later than five (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 Condition E.1.10(d)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Condition E.1.5(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 Condition E.1.9(b), and

(3) Is tested for compliance with Condition E.1.5(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 Condition E.1.10(e)(1), as an unsafe-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:

(1) The Permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Condition E.1.5(a), and

(2) The Permittee 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 Condition E.1.10(e)(2), as a difficult-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:

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

(2) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the Permittee designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

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

E.1.6 Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-8 (Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors), the Permittee shall comply with the following requirements:

(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 Permittee shall follow either one of the following procedures:

(1) The Permittee shall monitor the equipment within five (5) days by the method specified in Condition E.1.9(a) and shall comply with the requirements of Conditions E.1.6(b) through (d).

(2) The Permittee 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) 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 Condition E.1.8. 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 Condition E.1.5(e).

E.1.7 Standards: Closed Vent Systems and Control Devices [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-10 (Standards: Closed Vent Systems and Control Devices), the Permittee shall comply with the following requirements:

(a) For closed vent systems and control devices used to comply with the provisions of 40 CFR 60, Subpart VV, the Permittee shall comply with the provisions of this Condition.

(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 40 CFR 60.18.

(e) For control devices used to comply with the provisions of 40 CFR 60, Subpart VV, the Permittee shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in Conditions E.1.7(i) through (k), each closed vent system shall be inspected according to the procedures and schedule specified below:

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the Permittee shall comply with the requirements specified in Conditions E.1.7(f)(1)(A) and (f)(1)(B):

(A) Conduct an initial inspection according to the procedures in Condition E.1.9(a); and

(B) 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 Permittee shall:

(A) Conduct an initial inspection according to the procedures in Condition E.1.9(a); and

(B) Conduct annual inspections according to the procedures in Condition E.1.9(a).

(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 Condition E.1.7(h).

(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 Permittee 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 Condition E.1.7(f)(1)(A) and (f)(2).

(j) Any parts of the closed vent system that are designated, as described in Condition E.1.7(l)(1), as unsafe to inspect are exempt from the inspection requirements of Conditions E.1.7(f)(1)(A) and (f)(2) if they comply with the following requirements:

(1) The Permittee 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 Conditions E.1.7(f)(1)(A) or (f)(2); and

(2) The Permittee 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 Condition E.1.7(l)(2), as difficult to inspect are exempt from the inspection requirements of Conditions E.1.7(f)(1)(A) and (f)(2) if they comply with the requirements specified below:

(1) The Permittee 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 40 CFR 60.14 and 60.15, or the Permittee designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The Permittee 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 Permittee shall record the information specified below:

(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 Condition E.1.10(b).

(4) For each inspection conducted in accordance with Condition E.1.9(a) 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 Condition E.1.7(f)(1)(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.

(m) Closed vent systems and control devices used to comply with provisions of 40 CFR 60, Subpart VV shall be operated at all times when emissions may be vented to them.

E.1.8 Standards: Delay of Repair [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-9 (Standards: Delay of Repair), the Permittee shall comply with the following requirements:

(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 Permittee 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 Condition E.1.7.

(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.

Compliance Determination Requirements

E.1.9 Test Methods and Procedures [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.485 (Test Methods and Procedures), the Permittee shall comply with the following requirements:

(a) The Permittee shall determine compliance with the standards in Conditions E.1.1 through E.1.8 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:

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

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

(b) The Permittee shall determine compliance with the no detectable emission standards in Conditions E.1.1(e), E.1.2, and E.1.5(f) as follows:

(1) The requirements of Condition E.1.10(a) 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.

(c) The Permittee 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 in 40 CFR 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, Conditions E.1.9(c) (1) and (2) shall be used to resolve the disagreement.

(d) The Permittee shall demonstrate that 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 in 40 CFR 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.

(e) Samples used in conjunction with Conditions E.1.9(c), (d), and (f) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(f) The Permittee 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 (H_T) 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 in 40 CFR 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 in 40 CFR 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.

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

E.1.10 Recordkeeping Requirements [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.486 (Recordkeeping Requirements), the Permittee shall comply with the following requirements:

(a) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, 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 Condition E.1.6(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.

(b) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, the following information shall be recorded in a log 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 Condition E.1.10(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 employee 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.

(c) The following information pertaining to the design requirements for closed vent systems and control devices described in Condition E.1.7 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 Condition E.1.7(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 Conditions E.1.1, E.1.2, and E.1.3 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 Conditions E.1.1, E.1.2, and E.1.3.

(d) The following information pertaining to all equipment subject to the requirements in Conditions E.1.1 through E.1.8 and 40 CFR 60.482-1 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 40 CFR 60, Subpart VV.

(2) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of Conditions E.1.1(e) and E.1.5(f) and the designation of equipment as subject to the requirements of Conditions E.1.1(e) or E.1.5(f) shall be signed by the Permittee.

(3) A list of equipment identification numbers for pressure relief devices required to comply with Condition E.1.2.

(4) The following information:

(A) The dates of each compliance test as required in Conditions E.1.1(e), E.1.2, and E.1.5(f);

(B) The background level measured during each compliance test;

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

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

(e) The following information pertaining to all valves subject to the requirements of Conditions E.1.5(g) and (h) and to all pumps subject to the requirements of Conditions E.1.1(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.

(f) The following information shall be recorded for valves complying with Condition E.1.1:

(1) A schedule of monitoring.

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

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

(1) Design criterion required in Conditions E.1.1(d)(5) and explanation of the design criterion; and

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

(h) 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.

(i) The provisions of 40 CFR 60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

E.1.11 Reporting Requirements [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.487 (Reporting Requirements), the Permittee shall comply with the following requirements:

(a) The Permittee shall submit semiannual reports to the Administrator and IDEM.

(b) All semiannual reports to the Administrator shall include the following information, summarized from the information required in Condition E.1.10.

(1) Process unit identification.

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

(A) Number of valves for which leaks were detected as described in Condition E.1.5(b),

(B) Number of valves for which leaks were not repaired as required in Condition E.1.5(d),

(C) Number of pumps for which leaks were detected as described in Conditions E.1.1(b) and E.1.1(d)(6),

(D) Number of pumps for which leaks were not repaired as required in Conditions E.1.1(c) and E.1.1(d)(6),

(E) 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.

(c) Revisions to items reported in the initial semiannual report if changes have occurred since the initial report or subsequent revisions to the initial report.

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037

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
Phone: 317-233-5674
Fax: 317-233-5967

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037

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

9 This is an emergency as defined in 326 IAC 2-7-1(12)
- ☐ The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and
- ☐ The Permittee must submit notice in writing or by facsimile within two (**2**) days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16

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

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

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

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

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

FESOP Quarterly Report

Source Name: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037
Facility: Entire Source
Parameter: DDGS Production Rate
Limit: Less than 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037
Facility: Entire Source
Parameter: Total Ethanol Production Rate
Limit: Less than 50 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037
Facility: Ethanol Loadout Terminal
Parameter: Ethanol Loadout Rate for Trucks
Limit: Less than 2.5 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037
Facility: Biomethanator Flare EP-15
Parameter: Operating Hours
Limit: Less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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)
SEMIANNUAL DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037

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

Page 1 of 2

This report is an affirmation that the source has met all the requirements stated in this permit. 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. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do 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.

Indiana Department of Environmental Management
Office of Air Quality

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

Source Background and Description

Source Name:	Iroquois Bio-Energy Company, LLC
Initial Source Location:	751 West State Road 114, Rensselaer, Indiana 47978
County:	Jasper
SIC Code:	2869
Operation Permit No.:	073-16720-00037
Operation Permit Issuance Date:	January 8, 2004
Significant Permit Revision No.:	073-20945-00037
Permit Reviewer:	ERG/YC

The Office of Air Quality (OAQ) has reviewed a revision application from Iroquois Bio-Energy Company, LLC relating to the construction and operation of the emission units at a new ethanol production plant

History

Iroquois Bio-Energy is a new ethanol production plant and was permitted to construct and operate in FESOP #073-16720-00037, issued on January 8, 2004. The Permittee has not completed the construction of this plant. On March 11, 2005, Iroquois Bio-Energy submitted a letter to IDEM, OAQ requesting the following changes to their FESOP:

(a) The fermentation process will be controlled by a single packed tower water scrubber (C40) with a control efficiency of 98% for VOC in place of the regenerative TO.

(b) The Permittee proposed to install a recuperative thermal oxidizer (125 MMBtu/hr, 98% destruction efficiency for VOC) with heat recovery steam generator in place of two (2) 73.3 MMBtu/hr package boilers.

(c) The distillation process will exhaust directly to the new recuperative thermal oxidizer/heat recovery steam generator in place of a scrubber followed by the regenerative TO.

(d) The Permittee proposed to install two (2) DDGS dryers (42 MMBtu/hr) in place of a single 67 MMBtu/hr dryer. These two (2) new dryers will be controlled by the new recuperative thermal oxidizer/heat recovery steam generator.

(e) The DDGS loadout process will be controlled by a new baghouse (C90) in place of venting directly to atmosphere.

(f) The VOC emissions from the ethanol truck loading process will be controlled by a flare (C50) in place of venting to the atmosphere.

(g) The final product tanks, shift tanks, and denaturant storage tank will be equipped with internal floating roofs.

(h) The Permittee proposed to install a biomethanator which will be used to process the contact waste water that will then be recirculated back into the cook tank. The methane produced by the biomethanator will offset natural gas usage at the DDGS dryers. When the DDGS dryers are down, the methane will be flared by the biomethanator flare. No contact process water will be discharged.

The Permittee also proposed several changes to the process layout, unit identification numbers, and maximum capacities of the storage tanks. The revised significant emission units, including the changes above, are listed below:

(a) One (1) grain receiving and storage operation, identified as P20, to be constructed in 2005, with a maximum capacity of 420 tons of grain per hour, controlled by baghouse C20, exhausting through stack S20, and consisting of the following:

(1) One (1) grain unloading operation.

(2) One (1) elevator leg.

(3) One (1) storage bin fill conveyor.

(4) Four (4) grain storage silos, with a total storage capacity of less than 1,000,000 bushels.

(5) One (1) storage bin emptying conveyor.

(6) One (1) day storage bin, with a maximum capacity of 5,000 bushels.

(b) Two (2) hammermills, identified as P30, to be constructed in 2005, each with a maximum capacity of 100 tons of grain per hour, controlled by baghouse C30, and exhausting through stack S30.

(c) One (1) Distiller's Dried Grains and Solubles (DDGS) cooling system, identified as P70, to be constructed in 2005, with a maximum throughput rate of 20 tons of DDGS per hour, equipped with an integral cyclone and controlled by baghouse C70, and exhausting through stack S70.

(d) One (1) DDGS loadout operation, identified as P90, to be constructed in 2005, with a maximum throughput rate of 400 tons/hr, controlled by baghouse C90, and exhausting through stack S90.

(e) One (1) fermentation process, identified as P40, to be constructed in 2005, with a maximum throughput rate of 6,500 gallons per hour, consisting of four (4) fermenters and one (1) beer well system, controlled by a CO_2 scrubber C40, and exhausting through stack S40.

(f) One (1) recuperative thermal oxidizer/heat recovery steam generator, identified as C10, to be constructed in 2005, using natural gas and process waste gases from the dryers as fuels, with a maximum heat input capacity of 125 MMBtu/hr, and exhausting through stack S10.

(g) One (1) mashing, cooking, and liquefaction operation, identified as P10, to be constructed in 2005, with a maximum wet dryer feed rate of 48 tons of wet cake (with 65% water) per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, consisting of the following:

(1) Meal conveying operations.

(2) One (1) mash mixer, where process water and/or hot water is added to meal to form mash.

(3) Two (2) slurry tanks, where ammonia is added to mash as needed to adjust pH levels, each with a maximum capacity of 16,000 gallons.

(4) One (1) cook tube, where steam is injected to sterilize mash and gelatinize starch, with a maximum capacity of 5,000 gallons.

(5) One (1) flash tank, with a maximum capacity of 2,000 gallons.

(6) One (1) receiver tank.

(7) One (1) yeast tank, with a maximum capacity of 21,000 gallons.

(h) One (1) distillation and dehydration operation, to be constructed in 2005, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, and consisting of the following:

(1) One (1) beer column.

(2) One (1) side stripper.

(3) One (1) rectifier column.

(4) One (1) 190 proof condenser.

(5) Three (3) molecular sieves.

(6) One (1) 200 proof condenser.

(7) Three (3) centrifuges.

(8) One (1) centrate storage tank, with a maximum capacity of 990 gallons.

(9) Eight (8) evaporators.

(i) Two (2) natural gas fired DDGS dryers in series, identified as Dryers A and B, to be constructed in 2005, each with a maximum heat input capacity of 42 MMBtu/hr and a maximum throughput rate of 20 tons of DDGS per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, and exhausting through stack S10.

(j) One (1) ethanol loading terminal for both trucks and railcars, identified as P50, to be constructed in 2005, with a maximum loading rate of 36,000 gallons per hour for truck loading and a maximum loading rate of 72,000 gallons per hour for railcar loading. The truck loading process is controlled by an open flare C50, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausting through stack S50.

For the insignificant activities at this source, the Permittee stated that they do not plan to construct the following emission units permitted in FESOP #073-16720-00037, issued on January 8, 2004:

(a) Space heaters, process heaters, or boilers using natural gas-fired combustion with heat input equal to or less than ten million (10,000,000) British thermal units per hour.

(b) Equipment powered by internal combustion engines of capacity equal to or less than five hundred thousand (500,000) British thermal units per hour, provided that the total

capacity of such equipment operated by this emission source does not exceed two million (2,000,000) British thermal units per hour.

(c) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs equal to or less than 12,000 gallons.

(d) The following equipment where the usage does not result in the emission of HAPs: brazing, cutting torches, soldering, and welding.

(e) Unpaved roads.

Therefore, the above insignificant activities should be removed from the revised FESOP. Based on the new layout of this plant and the additional information received from the source, the revised insignificant activities at this source are listed as follows:

(a) Combustion source flame safety purging on startup.

(b) A gasoline fuel transfer dispensing operation handling less than or equal to 1,300 gallons per day and filling storage tanks having a capacity equal to or less than 10,500 gallons.

(c) A petroleum fuel other than gasoline dispensing facility, having a storage tank capacity less than or equal to 10,500 gallons, and dispensing 3,500 gallons per day or less.

(d) Cleaners and solvents characterized as:

(1) having a vapor pressure equal to or less than two (2.0) kilo Pascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch) measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or

(2) having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit);

the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.

(e) One (1) process cooling tower, identified as P80, with a maximum water circulation rate of 1,200,00 gallons per hour, consisting of four (4) cells.

(f) Blowdown for any of the following:

(1) Sight glass.

(2) Boilers.

(3) Cooling tower.

(4) Compressors.

(5) Pumps.

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

(h) Heat exchanger cleaning and repair.

(i) Paved roads and parking lots with public access.

(j) Diesel fired emergency generators not exceeding 1,600 horsepower, including one (1) emergency diesel fired water pump, identified as EP-16, with a maximum power output of 190 hp.

(k) Filter or coalescer media changeout.

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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) Two (2) final product storage tanks, identified as TK61 and TK62, constructed in 2005, which store denatured ethanol, each with a maximum capacity of 500,000 gallons, and equipped with internal floating roofs.

(2) Two (2) shift tanks, identified as TK63 and TK65, constructed in 2005, which store 190 and 200 proof ethanol, each with a maximum capacity of 100,000 gallons, and equipped with internal floating roofs.

(3) One (1) denaturant (gasoline) storage tank, identified as TK64, constructed in 2005, which stores gasoline, with a maximum capacity of 100,000 gallons, and equipped with an internal floating roof.

(4) One (1) additive tank, identified as Additive TK, constructed in 2005, which stores corrosion inhibitor, with a maximum capacity of 2,301 gallons.

(5) One (1) thin stillage tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(6) One (1) syrup tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(7) One (1) cook water tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(8) Two (2) liquefaction tanks, constructed in 2005, each with a maximum capacity of 51,000 gallons.

(9) One (1) whole stillage tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(10) Two (2) methanators, used to clean up the contact waste water that will be recirculated back into the cook tank, exhausting to the DDGS dryers as supplement fuel. When the dryers are down, methane emissions from the methanators are controlled by flare C60, which has a maximum heat input capacity of 3.2 MMBtu/hr and exhausts through stack S60.

(11) Heat exchangers, identified as mash coolers, which are part of the mashing, cooking and liquefaction operations.

In order to maintain the FESOP status, the Permittee has proposed the following throughput limitations for this source:

(a) Less than 162,218 tons per year of DDGS produced.

(b) Less than 50 million gallons per year of ethanol produced.

(c) Less than 2.5 million gallons per year of denatured ethanol loading to trucks.

Upon further review, IDEM, OAQ has made the following changes to the permit:

(a) In accordance with the credible evidence rule (62 Fed. Reg. 8314, Feb 24, 1997); Section 113(a) of the Clean Air Act, 42 U.S. C. § 7413 (a); and a letter from the United States Environmental Protection Agency (USEPA) to IDEM, OAQ dated May 18, 2004, all permits must address the use of credible evidence; otherwise, U.S. EPA will object to the permits. A new condition - B.23 has been incorporated into the revised permit to address credible evidence.

(b) The mailing address of IDEM, OAQ has been changed as follows:

100 North Senate Avenue
Indianapolis, Indiana 46204

This change has been made throughout the whole permit.

Existing Approvals

The source was issued a FESOP (F073-16720-00037) on January 8, 2004. There are no other air approvals issued to this source.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

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

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

An application for the purposes of this review was received on March 11, 2005. Additional information was received on April 1, 2005, April 4, 2005, April 5, 2005, and May 18, 2005.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 11). The PTE of storage tanks is 2.59 tons/yr of VOC and 0.1 ton of HAP, which was calculated using EPA TANKS 4.0 software. The emissions calculations for storage tanks, equipment leaks, and fugitive PM/PM10 emissions from the grain and DDGS handling processes were provided by the applicant and have been verified and found to be accurate and correct.

Potential To Emit of the Revision

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical

or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	Greater than 250
PM-10	Greater than 250
SO_2	40.4
VOC	Greater than 250
CO	639
NO_x	105

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

HAP's	Potential To Emit (tons/year)
Formaldehyde	27.2
Acetaldehyde	63.1
Acrolein	6.0
Methanol	10.2
TOTAL	107

Justification for Permit Revision

This revision is being performed as a Significant Permit Revision because this is a modification subject to 326 IAC 8-1-6 and has potential to emit PM and all criteria pollutants greater than 25 tons/yr.

Potential to Emit After Revision

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units after control. The control equipment is considered federally enforceable only after issuance of this Permit Revision.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_x	HAPs
Grain Receiving and Storage, Hammermills, DDGS Cooling System, and DDGS Loadout Operation	Less than 10.9	Less than 10.9	-	Less than 8.11	-	-	Less than 0.46 for total HAPs
Fermentation Process	-	-	-	Less than 45.0	-	-	Less than 6.13 for a single HAP and less than 6.77 for total HAPs
2 DDGS Dryers, Distillation and Dehydration Process, and Thermal Oxidizer/Heat Recovery Steam Generator	Less than 16.2	Less than 16.2	Less than 37.3	Less than 24.3	Less than 97.3	Less than 91.5	Less than 1.70 for total HAPs

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Ethanol Loading Terminal	Negligible	Negligible	Negligible	Less than 9.20	Less than 0.16	Less than 0.10	Less than 0.01 for total HAPs
Storage Tanks* (Insignificant)	-	-	-	2.59	-	-	0.1 for total HAPs
Paved Road (Insignificant)	Less than 7.19	Less than 1.40	-	-	-	-	-
Cooling Tower (Insignificant)	5.48	5.48	-	-	-	-	-
Emergency Water Pump (Insignificant)	0.10	0.10	0.10	0.12	0.32	1.47	Negligible
Biomethanator Flare (Insigificant)	Negligible	Negligible	Negligible	Less than 0.04	Less than 0.30	Less than 0.05	Negligible
Fugitive Leaks*	-	-	-	4.43	-	-	0.77
Fugitive Emissions from Grain and DDGS Handling*	5.91	2.17	-	-	-	-	-
Total Potential to Emit of the Entire Source	Less than 45.8	Less than 36.3	Less than 37.4	Less than 93.8	Less than 98.1	Less than 93.1	Less than 9.80 for total HAPs
Title V Major Source Thresholds	NA	100	100	100	100	100	10 for a single HAP and 25 for total HAPs.

*These emissions were estimated by the Permittee.

After making the changes proposed in this revision, the potential to emit of the criteria pollutants from the entire source is still limited to less than the Title V major source thresholds. Therefore, the requirements of 326 IAC 2-7 are not applicable to this source.

County Attainment Status

The source is initially located Jasper County.

Pollutant	Status
PM-10	Attainment
PM-2.5	Attainment or Unclassifiable
SO_2	Attainment
NO_2	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(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 emissions and NOx are considered when evaluating the rule applicability relating to ozone. Jasper 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) Jasper County has been classified as unclassifiable or attainment for PM 2.5. 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 PM 2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM 2.5 emissions.

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

(d) Fugitive Emissions
This type of operation is in one of the 28 listed source categories under 326 IAC 2-2. Therefore, the fugitive emissions are counted toward determination of PSD applicability.

Federal Rule Applicability

(a) This source does not have a grain elevator with a permanent storage capacity greater than 2.5 million bushels. Therefore, this source is not subject to the requirements of the New Source Performance Standards for Grain Elevators (326 IAC 12, 40 CFR 60.300-304, Subpart DD).

(b) The recuperative thermal oxidizer/heat recovery steam generator (C10) is also used to produce steam and has a maximum heat input capacity greater than 100 MMBtu/hr and will be constructed after June 19, 1984. Therefore, this unit is subject to the New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40b-49b, Subpart Db).

Since the recuperative thermal oxidizer/heat recovery steam generator uses natural gas and the process emissions from the DDGS dryers as fuels, there are no applicable SO_2 and PM emission limits for this unit in 40 CFR 60, Subpart Db. Pursuant to 40 CFR 60.44b, the NOx emissions from this unit shall not exceed 0.1 lbs/MMBtu.

Since this thermal oxidizer has a maximum heat input capacity less than 250 MMBtu/hr and uses natural gas as fuel, the Permittee shall comply with one of the following monitoring requirements:

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

(2) Pursuant to 40 CFR 60.48b(h)(2), the Permittee shall monitor steam generating unit operating conditions and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to 40 CFR 60.49b(c).

The Permittee has proposed to monitoring the operating conditions, such as the air fuel mixture, oxygen content, temperature, and volume of gas burned in the recuperative thermal oxidizer/heat recovery steam generator (C10) to demonstrate compliance with this NSPS.

The Permittee is also required to comply with the NOx testing requirements in 40 CFR 60.46b and the reporting and recordkeeping requirements in 40 CFR 60.49b.

(c) Each of the final product storage tanks (TK61 and TK62), shift tanks (TK63 and TK65), and denaturant storage tank (TK64) has a capacity greater than 75 cubic meters (19,813 gallons) and is used to store liquids with maximum vapor pressures greater than 3.5 kPa. (0.51 psi). 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).

Tanks TK61 through TK65 have capacities greater than 151 cubic meters (39,890 gallons) and store liquids with maximum vapor pressures greater than 5.2 kPa (0.75 psi) and less than 76.6 kPa (11.1 psi). Therefore, these tanks are subject to the requirements in 40 CFR 60.112b(a). The Permittee has elected to install internal floating roofs with these fix roof tanks and shall comply with the following requirements in 40 CFR 60.112b(a)(1):

(1) 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.

(2) 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.

(3) 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.

(4) 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.

(5) 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.

(6) 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.

(7) 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.

(8) 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.

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

The Permitee shall also comply with the testing requirements in 40 CFR 60.113b(a), the monitoring requirements in 40 CFR 60.116b, and the recordkeeping and reporting requirements in 40 CFR 60.115b.

(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). Therefore, this source shall comply with the requirements in 40 CFR 60, Subpart VV.

Pursuant to 40 CFR 60.480(a)(2), the affected facilities are the process units, which are defined as components assembled to produce ethanol (as intermediate or final products). Pursuant to 40 CFR 60.482-1, the Permittee shall comply with the following general requirements:

(1) The Permittee shall demonstrate compliance with the requirements of 40 CFR 60.482-1 through 60.482-10 or 40 CFR 60.480(e) for all equipment within 180 days of initial startup.

(2) Compliance with 40 CFR 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 40 CFR 60.485.

(3) The Permittee may request a determination of equivalence as a means of emission limitation to the requirements of 40 CFR 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 40 CFR 60.484.

(4) Equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2 to 60.482-10 if it is identified as required in 40 CFR 60.486(e)(5).

The specific requirements for pumps, compressors, pressure relief devices, sampling connection systems, and valves are listed in the permit. The Permittee shall also comply with the testing requirements in 40 CFR 60.485, the recordkeeping requirements in 40 CFR 60.486, and the reporting requirements in 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) was excluded from the scope of NSPS, Subpart NNN. Therefore, the distillation unit at this new ethanol production plant is not subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels VOC Emissions From Synthetic Organic Chemical Manufacturing

Industry (SOCMI) Distillation Operations (326 IAC 12, 40 CFR 60.660 - 667, Subpart NNN).

(f) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 20, and 40 CFR Part 61 and 63) included in this permit.

(g) This source will limit the 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 thermal oxidizer/heat recovery steam generation unit at this source is not subject to the National Emission Standards for Hazardous Air Pollutants - Industrial/Commercial/Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD).

(h) This ethanol production plant is not subject to the requirements of 40 CFR 63, Subpart F, G, and H - National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry. 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). Since this source only produces ethanol, which is not one of the chemicals listed in Table 1 of 40 CFR 63, Subpart F or in 40 CFR 63.100(b)(1)(i) and (b)(1)(ii), this source is not subject to the requirements of these NESHAP.

(i) This ethanol production plant is not subject to 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 because this source does not manufacture any of the materials listed in 40 CFR 63.190(b)(1) through (b)(6).

(j) This source has accepted FESOP limits to be a minor source for HAPs. Therefore, the emergency water pump at this source is not subject to National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ).

State Rule Applicability - Entire Source

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

The source will be constructed in 2005. The source is in 1 of 28 source categories as defined in 326 IAC 2-2-1(y)(1) and the potential to emit PM, PM10, VOC, CO, and NOx from the entire source before control is greater than 100 tons/yr.

In order to make the requirement of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limitations:

(a) The PM emissions from the grain receiving and storage operation (P20), hammermills (P30), DDGS cooling system (P70), and DDGS loadout operation (P90) shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	PM Limit (lbs/hr)
P20	Grain Receiving and Storage	1.34
P30	Hammermills	0.60
P70	DDGS Cooling System	0.38
P90	DDGS Loadout	0.16

This is equivalent to 10.9 tons/yr of PM emissions. The use of baghouses C20, C20, C70, and C90 ensures compliance with the PM limits above.

(b) The PM emissions from recuperative thermal oxidizer/heat recovery steam generator C10, which is used to control the DDGS dryers and distillation and dehydration process, shall not exceed 0.2 pounds per ton of DDGS produced.

Combined with the PM emissions from flare C50, paved road, and insignificant activities at this source, the PM emissions from the entire source are limited to less than 100 tons/yr.

The source also accepted FESOP limits to limit the PM10, VOC, CO, and NOx emissions from the entire source to less than 100 tons/yr (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-4.1 (New Sources of Hazardous Air Pollutants)

The potential to emit HAPs from this new source is greater than 10 tons/yr for a single HAP and greater than 25 tons/yr for total HAPs before control. The Permittee has accepted FESOP limits on the HAP emissions from the entire source, which limits the emissions from the source to less than 10 tons/yr for a single HAP and less than 25 tons/yr 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, VOC, CO, and NOx before control of the entire source is greater than 100 tons/yr. In addition, the potential to emit HAP before control from this source is greater than 10 tons/yr for a single HAP (Acetaldehyde) and greater than 25 tons/yr for total HAPs. Pursuant to 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

(a) Emissions from the grain receiving and storage operation (P20), hammermills (P30), DDGS cooling system (P70), and DDGS loadout operation (P90) shall comply with the following:

(1) PM10 emissions from these units shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	PM10 Limit (lbs/hr)
P20	Grain Receiving and Storage	1.34
P30	Hammermills	0.60
P70	DDGS Cooling System	0.38
P90	DDGS Loadout	0.16

This is equivalent to 10.9 tons/yr of PM10 emissions. The use of baghouses C20, C20, C70, and C90 ensures compliance with the PM10 limits above.

(2) The DDGS production rate shall not exceed 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(3) VOC emissions from the DDGS cooling system (P70) shall not exceed 0.1 pounds per ton of DDGS produced. Combined with the DDGS production limit, this is equivalent to 8.11 tons/yr of VOC emissions.

(4) Total HAP emissions from the DDGS cooling system (P70) shall not exceed 0.01 pounds per ton of DDGS produced. Combined with the DDGS production limit, this is equivalent to 0.46 tons/yr of total HAP emissions.

(b) The emissions from the fermentation process (P40), which is controlled by wet scrubber C40, shall comply with the following:

(1) The ethanol production rate shall not exceed 50 million gallons (MMgal) per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) VOC emissions shall not exceed 1.8 pounds per 1,000 gallons of ethanol produced.

(3) Single HAP emissions shall not exceed 0.245 pounds per 1,000 gallons of ethanol produced.

(4) Total HAP emissions shall not exceed 0.271 pounds per 1,000 gallons of ethanol produced.

This is equivalent to 45.0 tons/yr of VOC emissions, 6.13 tons/yr of single HAP emissions, and 6.77 tons/yr of total HAP emissions.

(c) The emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10), which is used to control the DDGS dryers and distillation and dehydration process, shall not exceed the following:

(1) The DDGS production rate shall not exceed 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) PM10 emissions shall not exceed 3.70 lbs/hr or 0.2 pounds per ton of DDGS produced.

(3) VOC emissions shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced.

(4) SO_2 emissions shall not exceed 8.52 lbs/hr or 0.46 pounds per ton of DDGS produced.

(5) CO emissions shall not exceed 22.2 lbs/hr or 1.2 pounds per ton of DDGS produced.

(6) NOx emissions shall not exceed 20.9 lbs/hr.

(7) Total HAP emissions shall not exceed 0.39 lbs/hr or 0.021 pounds per ton of DDGS produced.

This is equivalent to 16.2 tons/yr of PM10, 24.3 tons/yr of VOC, 37.3 tons/yr of SO_2, 97.3 tons/yr of CO, 91.5 tons/yr of NOx, and 1.7 tons/yr of total HAP emissions.

(d) The Permittee shall comply with the following requirements for the ethanol loading terminal (P50), which is controlled by open flare C50 when loading ethanol to trucks:

(1) The total ethanol loadout rate (including trucks and railcars) shall not exceed 50 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The truck loadout process shall not exceed 2.5 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(3) CO emissions from flare C50 shall not exceed 0.13 lbs/kgal. Combined with the truck loadout limit of 2.5 million gallons per year, this is equivalent to 0.16 tons/yr of CO emissions.

(4) NOx emissions from flare C50 shall not exceed 0.10 lbs/kgal. Combined with the truck loadout limit of 2.5 million gallons per year, this is equivalent to 0.10 tons/yr of NOx emissions.

(e) The operating hours of the biomethanator flare EP-15 shall be less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month. This is equivalent to 0.05 tons/yr of NOx emissions and 0.30 tons/yr of CO emissions.

Combined with the emissions from other insignificant activities, the emissions from the entire source are limited to less than 100 tons/yr for PM10, VOC, CO, and NOx, 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) are not applicable.

326 IAC 2-6 (Emission Reporting)

This source is located in Jasper County and is not required to operate under a Part 70 permit. Therefore, the requirements of 326 IAC 2-6 are not applicable to this source.

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.

State Rule Applicability - Grain and DDGS 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 limits listed in the table below:

Unit ID	Process Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
P20	Grain Receiving and Storage Operation	420	66.9
P30	Each of the Hammermills	100	51.3
P70	DDGS Cooling System	20	30.5
P90	DDGS Loadout Operation	400	66.3

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 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

According to the emission calculations (see Appendix A), the potential to emit PM after control from the grain receiving and storage operation (P20), hammermills (P30), DDGS cooling system (P70), and DDGS loadout operation (P90) is less than the emission limits above. Therefore, these operations are in compliance with 326 IAC 6-3-2. The use of the baghouses C20, C30, C70 and C90 with these operations ensures compliance with these limits.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The DDGS cooling system (P70) has potential VOC emissions less than 25 tons per year. Therefore, the requirements of 326 IAC 8-1-6 (BACT) are not applicable.

State Rule Applicability - Fermentation Process

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this process. Therefore, this fermentation process is subject to 326 IAC 8-1-6 and the Permitteee is required to control VOC emissions with the Best Available Control Technologies (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 process shall be controlled by wet scrubber C40.

(b) The control efficiency for the wet scrubber C40 shall be at least 98%, or the outlet VOC concentration shall not exceed 20 ppmv when the inlet VOC concentration is lower than 200 ppmv.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from wet scrubber C40 shall not exceed 1.8 pound per 1,000 gallons of ethanol produced.

State Rule Applicability - Recuperative Thermal Oxidizer/Heat Recovery Steam Generator (C10)

326 IAC 6-2-4 (PM Emissions for Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-4(a), indirect heating facilities constructed after September 12, 1983, shall be limited by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

The total source heat input capacity for the recuperative thermal oxidizer/heat recovery steam generator (C10) is 125 MMBtu/hr. Therefore, the PM emission limit for this unit is:

$$Pt = \frac{1.09}{125^{0.26}} = 0.31 \text{ lbs/MMBtu.}$$

This unit has a maximum heat input capacity of 125 MMBtu/hr. A PM emission limit of 0.31 lbs/MMBtu is equivalent to 129 lbs/hr (0.31 lbs/MMBtu x 125 MMBtu/hr = 38.8 lbs/hr). According to the emission calculations in Appendix A, PM emissions from this unit are 4.0 lbs/hr. Therefore, this unit is in compliance with the PM requirements in 326 IAC 6-2-4.

State Rule Applicability - Mashing, Cooking, and Liquefaction Operation (P10)

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

Pursuant to 326 IAC 6-3-2, particulate emissions from mashing, cooking, and liquefaction operation (P10) shall not exceed 44.2 pounds per hour when operating at a maximum throughput rate of 42 tons/hr.

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

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

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

This operation is a wet process and the use of the recuperative thermal oxidizer/heat recovery steam generator (C10) ensures compliance with this limit.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The mashing, cooking, and liquefaction operation (P10) at this source will be constructed after January 1, 1980. Since the potential VOC emissions from this operation are less than 25 tons/yr, the requirements of 326 IAC 8-1-6 (BACT) are not applicable.

State Rule Applicability - Distillation and Dehydration Operation

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The distillation and dehydration process at this source will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this operation. Therefore, this operation is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions with the Best Available Control Technologies (BACT). According to the BACT analysis in Appendix B, BACT for this process has been determined to be the following:

(a) The VOC emissions from the distillation and dehydration process shall be controlled by recuperative thermal oxidizer/heat recovery steam generator C10.

(b) The destruction efficiency for recuperative thermal oxidizer/heat recovery steam generator C10 shall be at least 98%.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10) shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced.

Note that recuperative thermal oxidizer/heat recovery steam generator C10 will also be used to control the DDGS dyers. Therefore, the BACT for this distillation and dehydration operation is the same as the BACT for the DDGS dryers.

State Rule Applicability - Two (2) DDGS Dryers

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 dryers shall not exceed 30.5 pounds per hour when operating at a maximum process weight rate of 20 tons/hr.

The pounds per hour limitations were calculated with 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 recuperative thermal oxidizer/heat recovery steam generator C10 with these DDGS dryers ensures compliance with the limit above.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The DDGS dryers at this source will be constructed after January 1, 1980 and each has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to these dryers. Therefore, the DDGS dryers are subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions with the Best Available Control Technologies (BACT). According to the BACT analysis in Appendix B, BACT for these dryers has been determined to be the following:

(a) The VOC emissions from the DDGS dryers shall be controlled by recuperative thermal oxidizer/heat recovery steam generator C10.

(b) The destruction efficiency for recuperative thermal oxidizer/heat recovery steam generator C10 shall be at least 98%.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10) shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced.

State Rule Applicability - Ethanol Loading Terminal (P50)

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The ethanol loading terminal (P50) at this source will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year when loading ethanol to trucks. There are no other rules in 326 IAC 8 applicable to this loading operation. Therefore, this ethanol loading terminal is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions with the Best Available Control Technologies (BACT). According to the BACT analysis in Appendix B, BACT for this ethanol loading terminal has been determined to be the following:

(a) The VOC emissions from the ethanol loading terminal shall be collected and controlled by open flare C50 when loading denatured ethanol to trucks.

(b) The overall control efficiency (including destruction efficiency and capture efficiency) for flare C50 shall be at least 98%.

(c) The VOC emissions from the flare C50 shall not exceed 0.69 lbs/hr.

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

State Rule Applicability - Paved Roads (Insignificant Activities)

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 - Storage Tanks (Insignificant Activities)

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

The storage tanks at this source will not be used to store petroleum. Therefore, the requirements of 326 IAC 8-4-3 are not applicable to these tanks.

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

The thermal oxidizer/heat recovery steam generator C10 is subject to the requirements of 40 CFR 60, Subpart Db and shall conduct an initial performance test for NOx emissions, pursuant to 40 CFR 60.46b (c).

In order to demonstrate compliance with the FESOP and PSD minor limits, the Permittee shall perform the following tests within 60 days after achieving the maximum capacity but not later than 180 days after initial startup of this ethanol production plant:

(a) VOC and HAP tests for the DDGS cooling system (P70).

(b) VOC and HAP tests for scrubber C40, which is used to control the fermentation process.

(c) PM, PM10, VOC, SO_2, CO, NOx, and HAP tests for the recuperative thermal oxidizer/heat recovery steam generator C10, which is used to control the DDGS dryers, and distillation and dehydration process.

These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Note that there are no stack testing requirements for flare C50 since it is an open flare.

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 Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will

arise through a source's failure to take the appropriate corrective actions within a specific time period.

1. The grain receiving and storage operation (P20), the hammermills (P30), and the DDGS loadout operation (P90) have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses C20, C30, and C90.

   (a) Visible emission notations of the baghouse stack exhausts (stacks S20, S30, and S90) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

   (b) The Permittee shall record the total static pressure drop across the baghouses at least once per day when the grain receiving and storage operation (P20), the hammermills (P30), and the DDGS loadout operation (P90) are in operation. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 3.0 and 10.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

   (c) An inspection shall be performed each calendar quarter of all baghouses controlling the grain receiving and storage operation (P20), the hammermills (P30), and the DDGS loadout operation (P90). Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced. In the event that bag failure has been observed:

      (1) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetables not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. If operations continue after bag failure is observed and it will be 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.

      (2) For single compartment baghouses, 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.

These monitoring conditions are necessary because the grain receiving and storage operation (P20), the hammermills (P30), and the DDGS loadout operation (P90) 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 DDGS cooling system (P70), which is equipped with an integral cyclone and controlled by baghouse C70, has applicable compliance monitoring conditions as specified below.

(a) Visible emission notations of the stack exhaust (stack S70) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

(b) The Permittee shall record the total static pressure drop across the baghouse at least once per day when the DDGS cooling system (P70) is in operation. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 3.0 and 10.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

(c) An inspection shall be performed each calendar quarter of all baghouses controlling the the DDGS cooling system (P70). Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced. In the event that bag failure has been observed:

(1) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetables not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. If operations continue after bag failure is observed and it will be 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.

(2) For single compartment baghouses, 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.

(d) In the event that cyclone failure has been observed, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. 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 - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

These monitoring conditions are necessary because the DDGS cooling system (P70) 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).

3. The fermentation process, which is controlled by wet scrubber C40, has applicable compliance monitoring conditions as specified below:

(a) The Permittee shall monitor and record the flow rate of scrubber C40 at least once per day when the associated fermentation process is in operation. When for any one reading, the flow rate of the scrubber is less than the minimum of 30 gallons per minute, or the minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Implementation, Preparation, Records, and Reports.

(b) An external inspection shall be performed each calendar quarter of the scrubber controlling the operation. Inspections required by this condition shall not be performed in consecutive months.

These monitoring conditions are necessary because scrubber C40 for fermentation process must operate properly to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-1-6 (BACT).

4. The DDGS dryers and the distillation and dehydration process (which are controlled by recuperative thermal oxidizer/heat recovery steam generator C10) have applicable compliance monitoring conditions as specified below:

(a) Visible emission notations of the stack exhaust of stack S10 shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C -

Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

(b) A continuous temperature monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature. For purposes 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 take appropriate response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the 3-hour average temperature of the thermal oxidizer is below 1,450^{0}F.

(c) 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.

(d) On and after the date the approved stack test results are available, the Permittee shall take appropriate response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the 3-hour average temperature of the thermal oxidizer/heat recovery steam generator is below the hourly average temperature as observed during the compliant stack test.

(e) 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.

(f) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer/heat recovery steam generator is in operation. When for any one reading, the duct pressure or fan amperage is outside the normal range as established in most recent compliant stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. A reading that is outside the range as established in the most recent compliant stack test is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports shall be considered a deviation from this permit.

These monitoring conditions are necessary because the recuperative thermal oxidizer/heat recovery steam generator (C10) must operate properly at all times the DDGS dryers, and the distillation and dehydration process are in operation to ensure compliance with 40 CFR 60, Subpart Db, 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 6-2-4 (PM Emissions for Sources of Indirect Heating), and 326 IAC 8-1-6 (BACT).

5. The ethanol loading terminal (P50), which is controlled by flare C50 when loading to trucks, 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 flare C50 must operate properly at all times that the ethanol loading terminal (P50) is loading denatured ethanol to trucks to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-1-6 (BACT).

Proposed Changes

The following changes have been made to the permit. Language with a line through it has been deleted, and bold language has been added. The Table of Contents has been updated as necessary.

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

The Permittee owns and operates an ethanol manufacturing plant.

Authorized Individual:	~~Mr. Keith Gibson~~ **General Manager**
Source Address:	751 W. State Road 114, Rensselaer, IN 47978-7265
Mailing Address:	P. O. Box 218, Rensselaer, IN 47978-0218
SIC Code:	2869
~~Source~~ **County** Location ~~Status~~:	Jasper County
~~County~~ **Source Location** Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act **1 of 28 Source Categories**

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

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

(a) **One (1)** ~~G~~**g**rain ~~R~~**r**eceiving~~, Cleaning~~ and ~~S~~**s**torage ~~O~~**o**peration~~s~~, ~~with a capacity of 58.1 tons of grain per hour, consisting of:~~ **identified as P20, to be constructed in 2005, with a maximum capacity of 420 tons of grain per hour, controlled by baghouse C20, exhausting through stack S20, and consisting of the following:**

(1) One (1) grain unloading operation.

(2) One (1) elevator leg.

(3) One (1) storage bin fill conveyor.

(4) Four (4) grain storage silos, with a total storage capacity of less than 1,000,000 bushels.

(5) One (1) storage bin emptying conveyor.

(6) One (1) day storage bin, with a maximum capacity of 5,000 bushels.

~~(1) Grain dump pits, identified as DP, where grain is discharged from hopper-bottom trucks.~~

~~(2) One (1) vibratory screening operation, which removes debris from grain.~~

~~(3) Discharge conveying operations.~~

~~(4) Five (5) grain storage silos with total storage capacity of 349,401 bushels.~~

~~Fugitive emissions from the dump pits and vibratory screening are minimized by enclosure inside a building. Particulate emissions inside the building are controlled by a baghouse rated at 99.9% efficiency, then exhausted through emission point EP-1.~~

~~(b) Surge Bin and Grain Milling Operations, consisting of:~~

~~(1) One (1) surge bin, identified as SB-202, with a capacity of four hours' supply of grain (approx. 8300 bushels).~~

~~(2) Grain conveying operations.~~

(~~3~~**b**) ~~Three (3)~~ **Two (2)** hammermills, identified as ~~M-204 A, B, and C, which process grain into grain meal.~~ **P30, to be constructed in 2005, each with a maximum capacity of 100 tons of grain per hour, controlled by baghouse C30, and exhausting through stack S30.**

(c) One (1) Distiller's Dried Grains and Solubles (DDGS) cooling system, identified as P70, to be constructed in 2005, with a maximum throughput rate of 20 tons of DDGS per hour, equipped with an integral cyclone and controlled by baghouse C70, and exhausting through stack S70.

(d) One (1) DDGS loadout operation, identified as P90, to be constructed in 2005, with a maximum throughput rate of 400 tons/hr, controlled by baghouse C90, and exhausting through stack S90.

(e) One (1) fermentation process, identified as P40, to be constructed in 2005, with a maximum throughput rate of 6,500 gallons per hour, consisting of four (4) fermenters and one (1) beer well system, controlled by a CO_2 scrubber C40, and exhausting through stack S40.

(f) One (1) recuperative thermal oxidizer/heat recovery steam generator, identified as C10, to be constructed in 2005, using natural gas and process waste gases from the dryers as fuels, with a maximum heat input capacity of 125 MMBtu/hr, and exhausting through stack S10.

~~Particulate emissions from each hammermill are controlled by a baghouse rated at 99.9% efficiency, then exhausted through emission point EP-3. Particulate emissions from the surge bin are controlled by the hammermill baghouses.~~

~~(c) Boilers, consisting of:~~

~~(1) Two (2) natural gas fired boilers, identified as BLR-1701 A and B, each rated at 73.3 million British thermal units per hour.~~

~~Nitrogen oxide emissions from BLR-1701 A and B are controlled by low-NOX burners rated at 0.035 pounds per million British thermal units heat input, then exhausted through emission point EP-4..~~

(~~d~~**g**) **One (1)** ~~M~~**m**ashing, ~~C~~**c**ooking and ~~L~~**l**iquefication ~~O~~**o**peration~~s~~, ~~consisting of~~: **identified as P10, to be constructed in 2005, with a maximum wet dryer feed rate of 48 tons of wet cake (with 65% water) per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, consisting of the following:**

(1) Meal conveying operations.

(2) One (1) mash ~~mingler~~ **mixer**, where process water and/or hot water is added to meal to form mash.

(3) ~~One (1)~~ **Two (2) slurry** ~~mash mix~~ tank**s**, where ammonia is added to mash as needed to adjust pH levels**, each with a maximum capacity of 16,000 gallons**.

(4) One (1) ~~jet cooker~~ **cook tube**, where steam is injected to sterilize mash and gelatinize starch**, with a maximum capacity of 5,000 gallons**.

(5) One (1) flash tank, with a maximum capacity of 2,000 gallons.

(6) One (1) receiver tank.

(7) One (1) yeast tank, with a maximum capacity of 21,000 gallons.

~~(5) One (1) liquefication tank, which cools mash after cooking.~~

~~Vapors from the liquefication tank are recycled to the Evaporation Operations.~~

~~(e) The Fermentation and Clean-in-Place (CIP) System, consisting of:~~

~~(1) Four (4) fermenters, including pumps and coolers, which ferment mash into beer. Carbon dioxide and ethanol vapors are emitted by this process.~~

~~(2) One (1) ethanol absorption column, identified as EAC-1, which recovers ethanol vapors from the fermenters and from the beer stills in the Distillation and Dehydration Operations.~~

~~(3) One (1) natural gas fired regenerative thermal oxidation (RTO) unit, rated at 0.63 million British thermal units per hour and 95% destruction efficiency.~~

~~(4) The Clean-in-Place (CIP) System.~~

~~(5) Associated pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.~~

~~Volatile organic compound emissions that are not successfully recovered by the ethanol absorption column are controlled by the RTO unit, then exhausted through emission point EP-6.~~

(~~f~~**h**) **One (1)** ~~D~~**d**istillation and ~~D~~**d**ehydration ~~O~~**o**peration~~s~~, ~~consisting of~~ **to be constructed in 2005, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, and consisting of the following**:

(1) One (1) beer column.

(2) One (1) side stripper.

(3) One (1) rectifier column.

(4) One (1) 190 proof condenser.

(5) Three (3) molecular sieves.

(6) One (1) 200 proof condenser.

(7) Three (3) centrifuges.

(8) One (1) centrate storage tank, with a maximum capacity of 990 gallons.

(9) Eight (8) evaporators.

(i) Two (2) natural gas fired DDGS dryers in series, identified as Dryers A and B, each with a maximum heat input capacity of 42 MMBtu/hr and a maximum throughput rate of 20 tons of DDGS per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, and exhausting through stack S10.

~~(1) One (1) beer well, which serves as a surge tank for beer.~~

~~(2) One (1) beer well agitator, which keeps solids from settling in the beer well.~~

~~(3) One (1) beer preheat train, utilizing hot vapors from the beer stills for heat input.~~

~~(4) Two (2) beer stills, which remove ethanol from beer, producing stillage as a byproduct. Noncondensible ethanol vapors and hydrous ethanol vapors are emitted from this process.~~

~~(5) One (1) stillage storage tank.~~

~~(6) Molecular sieve units, which remove water from superheated hydrous ethanol vapors. Superheating is done with process steam.~~

~~(7) One (1) molecular sieve cooler, which cools anhydrous ethanol vapors into liquid form.~~

~~(8) Associated pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.~~

~~Noncondensible ethanol vapors from the beer stills are directed to the ethanol absorption column in the Fermentation and Clean-in-Place (CIP) System for recovery. Volatile organic compound emissions that are not successfully recovered by the ethanol absorption column are controlled by the RTO unit, then exhausted through emission point EP-6.~~

~~(g) Centrifugation Operations, consisting of:~~

~~(1) Five (5) stillage centrifuges, which split stillage into solids, identified as cake, and liquids which contain dissolved solids, identified as centrate.~~

~~(2) Cake conveying operations~~

~~(3) One (1) centrate storage tank.~~

~~(h) Fuel Grade Product Blending Operations, consisting of:~~

~~(1) Two (2) shift tanks, identified as TK-801A and B, which store ethanol.~~

~~(2) One (1) recycle product tank, identified as TK-803, which stores ethanol.~~

~~(3) One (1) denaturant storage tank, identified as TK-805, which stores gasoline.~~

~~(4) One (1) final product storage tank, identified as TK-807, which stores fuel-grade ethanol.~~

(~~5~~**j**) One (1) ~~truck~~ **ethanol** loading ~~rack~~ **terminal for both trucks and railcars, identified as P50, constructed in 2005, with a maximum loading rate of 36,000 gallons per hour for truck loading and a maximum loading rate of 72,000 gallons per hour for railcar loading. The truck loading process is controlled by an open flare C50, which is**

fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausting through stack S50..

~~(6) Associated pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.~~

~~(i) Distiller's Dry Grain with Solubles (DDGS) Drying Operations, consisting of:~~

~~(1) One (1) blender, which combines cake with CDS syrup.~~

~~(2) One (1) natural gas fired DDGS dryer, identified as DR-8XX, rated at 67 million British thermal units per hour. Nitrogen oxide emissions are controlled by low-NOX burners rated at 0.035 pounds per million British thermal units heat input, then exhausted through emission point EP-9.~~

~~(3) DDGS storage bins.~~

~~(4) Truck loadout operations. Particulate emissions are exhausted through emission point EP-10.~~

~~Volatile organic compound emissions from the DDGS Dryer are controlled by using the airflow as intake air for the dryer's burner flame. Emissions are then exhausted through emission point EP-9.~~

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

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

~~(a) Space heaters, process heaters, or boilers using natural gas-fired combustion with heat input equal to or less than ten million (10,000,000) British thermal units per hour.~~

~~(b) Equipment powered by internal combustion engines of capacity equal to or less than five hundred thousand (500,000) British thermal units per hour, provided that the total capacity of such equipment operated by this emission source does not exceed two million (2,000,000) British thermal units per hour.~~

(~~c~~**a**) Combustion source flame safety purging on startup.

(~~d~~**b**) A gasoline fuel transfer dispensing operation handling less than or equal to 1,300 gallons per day and filling storage tanks having a capacity equal to or less than 10,500 gallons.

(~~e~~**c**) A petroleum fuel other than gasoline dispensing facility, having a storage tank capacity less than or equal to 10,500 gallons, and dispensing 3,500 gallons per day or less.

~~(f) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs equal to or less than 12,000 gallons.~~

(~~g~~**d**) Cleaners and solvents characterized as:

(1) having a vapor pressure equal to or less than two (2.0) kilo Pascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch) measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or

(2) having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit);

the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.

~~(h) The following equipment where the usage does not result in the emission of HAPs:~~

~~(1) Brazing.~~

~~(2) Cutting torches.~~

~~(3) Soldering.~~

~~(4) Welding.~~

(~~i~~**e**) One (1) process cooling tower, identified as ~~CT-1401~~ **P80**, **with a maximum water circulation rate of 1,200,00 gallons per hour,** consisting of ~~six (6)~~ **four (4)** cells. ~~Each cell has a cooling fan.~~

(~~j~~**f**) Blowdown for any of the following:

(1) Sight glass.

(2) Boilers.

(3) Cooling tower.

(4) Compressors.

(5) Pumps.

(~~k~~**g**) Replacement or repair of ~~electrostatic precipitators,~~ bags in baghouses, and filters in other air filtration equipment.

~~(l) Heat exchangers, identified as mash coolers, which are part of the Mashing, Cooking and Liquefication Operations.~~

(~~m~~**h**) Heat exchanger cleaning and repair.

~~(n) Evaporation Operations, consisting of:~~

~~(1) One (1) multiple-effect evaporator system, which removes water from centrate. This process produces concentrated dissolved solids (CDS) syrup.~~

~~(2) One (1) CDS syrup storage tank.~~

(~~o~~**i**) Paved ~~and unpaved~~ roads and parking lots with public access.

(~~p~~**j**) ~~Activities associated with emergencies, including:~~

~~(1) On-site fire training approved by IDEM.~~

~~(2)~~ Diesel fired emergency generators not exceeding 1,600 horsepower**, including one (1) emergency diesel fired water pump, identified as EP-16, with a maximum power output of 190 hp**.

~~(3) Stationary fire pumps.~~

(~~q~~**k**) Filter or coalescer media changeout.

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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) Two (2) final product storage tanks, identified as TK61 and TK62, constructed in 2005, which store denatured ethanol, each with a maximum capacity of 500,000 gallons, and equipped with internal floating roofs.

(2) Two (2) shift tanks, identified as TK63 and TK65, constructed in 2005, which store 190 and 200 proof ethanol, each with a maximum capacity of 100,000 gallons, and equipped with internal floating roofs.

(3) One (1) denaturant (gasoline) storage tank, identified as TK64, constructed in 2005, which stores gasoline, with a maximum capacity of 100,000 gallons, and equipped with an internal floating roof.

(4) One (1) additive tank, identified as Additive TK, constructed in 2005, which stores corrosion inhibitor, with a maximum capacity of 2,301 gallons.

(5) One (1) thin stillage tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(6) One (1) syrup tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(7) One (1) cook water tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(8) Two (2) liquefaction tanks, constructed in 2005, each with a maximum capacity of 51,000 gallons.

(9) One (1) whole stillage tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(10) Two (2) methanators, used to clean up the contact waste water that will be recirculated back into the cook tank, exhausting to the DDGS dryers as supplement fuel. When the dryers are down, methane emissions from the methanators are controlled by flare C60, which has a maximum heat input capacity of 3.2 MMBtu/hr and exhausts through stack S60.

(11) Heat exchangers, identified as mash coolers, which are part of the mashing, cooking and liquefaction operations.

B.23 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.

C.13 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)] [326 IAC 2-8-5(1)]

(a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ("2%) of full scale reading.

(b) Whenever a condition in this permit requires the measurement of a temperature and flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ("2%) of full scale reading.

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

C.~~13~~**14** Risk Management Plan [326 IAC 2-8-4] [40 CFR 68.215]

C.~~14~~**15** Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4] [326 IAC 2-8-5]

C.~~15~~**16** General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

C.~~16~~**17** General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

C.~~17~~**18** Compliance with 40 CFR 82 and 326 IAC 22-1

SECTION D.1 FACILITY OPERATION CONDITIONS

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

(a) **One (1)** ~~G~~**g**rain ~~R~~**r**eceiving~~, Cleaning~~ and ~~S~~**s**torage ~~O~~**o**peration~~s~~, ~~with a capacity of 58.1 tons of grain per hour, consisting of:~~ **identified as P20, to be constructed in 2005, with a maximum capacity of 420 tons of grain per hour, controlled by baghouse C20, exhausting through stack S20, and consisting of the following:**

(1) One (1) grain unloading operation.

(2) One (1) elevator leg.

(3) One (1) storage bin fill conveyor.

(4) Four (4) grain storage silos, with a total storage capacity of less than 1,000,000 bushels.

(5) One (1) storage bin emptying conveyor.

(6) One (1) day storage bin, with a maximum capacity of 5,000 bushels.

~~(1) Grain dump pits, identified as DP, where grain is discharged from hopper-bottom trucks.~~

~~(2) One (1) vibratory screening operation, which removes debris from grain.~~

~~(3) Discharge conveying operations.~~

~~(4) Five (5) grain storage silos with total storage capacity of 349,401 bushels.~~

~~Fugitive emissions from the dump pits and vibratory screening are minimized by enclosure inside a building. Particulate emissions inside the building are controlled by a baghouse rated at 99.9% efficiency, then exhausted through emission point EP-1.~~

~~(b) Surge Bin and Grain Milling Operations, consisting of:~~

~~(1) One (1) surge bin, identified as SB-202, with a capacity of four hours' supply of grain (approx. 8300 bushels).~~

~~(2) Grain conveying operations.~~

(3**b**) ~~Three (3)~~ **Two (2)** hammermills, identified as ~~M-204 A, B, and C, which process grain into grain meal.~~ **P30, to be constructed in 2005, each with a maximum capacity of 100 tons of grain per hour, controlled by baghouse C30, and exhausting through stack S30.**

(c) One (1) Distiller's Dried Grains and Solubles (DDGS) cooling system, identified as P70, to be constructed in 2005, with a maximum throughput rate of 20 tons of DDGS per hour, equipped with an integral cyclone and controlled by baghouse C70, and exhausting through stack S70.

(d) One (1) DDGS loadout operation, identified as P90, to be constructed in 2005, with a maximum throughput rate of 400 tons/hr, controlled by baghouse C90, and exhausting through stack S90.

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

~~D.1.1 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]~~

~~Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be minimized by enclosure of dump pits and vibratory screening operations inside a building and venting of the building to a control device.~~

~~Compliance Determination Requirements~~

~~D.1.2 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]~~

~~The Permittee is not required to test this facility by this permit.~~

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

~~D.1.3 Monitoring Not Required~~

~~There are no applicable compliance monitoring conditions for this facility.~~

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

~~D.1.4 Record Keeping Requirements~~

~~There are no specific record keeping requirements for this facility.~~

~~D.1.5 Reporting Requirements~~

~~There are no specific reporting requirements for this facility.~~

D.1.1 PM Emissions [326 IAC 2-2]

The PM emissions from the following units shall not exceed the emission limits listed in the table below.

Unit ID	Unit Description	PM Limit (lbs/hr)
P20	Grain Receiving and Storage	1.34
P30	Hammermills	0.60
P70	DDGS Cooling System	0.38
P90	DDGS Loadout	0.16

Combined with the PM emissions from thermal oxidizer/heat recovery steam generator (C10), flare C50, unpaved roads, and insignificant activities, the PM emissions from the entire source are limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

D.1.2 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2]

(a) PM10 emissions from these units shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	PM10 Limit (lbs/hr)
P20	Grain Receiving and Storage	1.34
P30	Hammermills	0.60
P70	DDGS Cooling System	0.38
P90	DDGS Loadout	0.16

(b) The DDGS production rate shall not exceed 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) VOC emissions from the DDGS cooling system (P70) shall not exceed 0.1 pounds per ton of DDGS produced.

(d) Total HAP emissions from the DDGS cooling system (P70) shall not exceed 0.01 pounds per ton of DDGS produced.

Combined with the emissions from other emission units, the PM10 and VOC emissions from the entire source are each limited to less than 100 tons/yr, the HAPs 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.1.3 Particulate Emission Limitations [326 IAC 6-3-2]

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:

Unit ID	Process Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
P20	Grain Receiving and Storage Operation	420	66.9
P30	Each of the Hammermills	100	51.3
P70	DDGS Cooling System	20	30.5
P90	DDGS Loadout Operation	400	66.3

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 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**

D.1.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.1.5 PM and PM10 Control

In order to comply with Conditions D.1.1, D.1.2(a), and D.1.3, 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 ID	Process Description	Baghouse ID
P20	Grain Receiving and Storage Operation	C20
P30	Each of the Hammermills	C30
P70	DDGS Cooling System	C70
P90	DDGS Loadout Operation	C90

D.1.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.2(c) and (d), the Permittee shall perform VOC and HAP testing for the DDGS cooling system (P70) 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.1.7 Visible Emissions Notations

(a) Visible emission notations of the baghouse stack exhausts (stacks S20, S30, S70, and S90) 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) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.1.8 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the grain receiving and storage operation (P20), the hammermills (P30), the DDGS cooling system (P70), and the DDGS loadout operation (P90) 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 3.0 to 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records and Reports. 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 - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other 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.1.9 Baghouse Inspections

An inspection shall be performed each calendar quarter of all baghouses controlling the the grain receiving and storage operation (P20), the hammermills (P30), the DDGS cooling system (P70), and the DDGS loadout operation (P90). Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.1.10 Broken or Failed Bag Detection

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetables not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 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.

(b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then 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).

D.1.11 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. 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 - Compliance Response Plan -Preparation, Implementation, Records, and Reports, 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.1.12 Record Keeping Requirements

(a) To document compliance with Condition D.1.2(b), the Permittee shall maintain monthly records of the DDGS produced.

(b) To document compliance with Condition D.1.7, the Permittee shall maintain daily records of visible emission notations of the baghouse stack exhausts.

(c) To document compliance with Condition D.1.8, the Permittee shall maintain daily records of the total static pressure drop during normal operation.

(d) To document compliance with Condition D.1.9, the Permittee shall maintain records of the results of the inspections required under Condition D.1.9.

(e) To document compliance with Condition D.1.4, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

(f) 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 Condition D.1.2(b) 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 "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION D.2 FACILITY OPERATION CONDITIONS

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

(b) Surge Bins and Grain Milling Operations, with a capacity of 58.1 tons of grain per hour, consisting of:

(1) One (1) surge bin, identified as SB-202, with a capacity of four hours' supply of grain (approx. 8300 bushels).

(2) Grain conveying operations.

(3) Three (3) hammermills, identified as M-204 A, B, and C, which process grain into grain meal.

Particulate emissions from the surge bin and the hammermills are controlled by three (3) baghouses, each rated at 99.9% efficiency, then exhausted through emission point EP-3.

(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.2.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3-2, particulate matter (PM) emissions shall be limited by the following equation for process weight rates greater than sixty thousand (60,000) pounds per hour:

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

For a process weight rate of 58.1 tons per hour, the equation states an emission limit of 46.0 pounds of particulate matter per hour.

D.2.2 Control Device Required for Particulate Matter (PM) [326 IAC 2-8]

The control devices for PM control shall be in operation at all times whenever an emission unit that it controls is in operation. Compliance with this condition will ensure that PM emissions are in compliance with Condition D.2.1 in this permit. Compliance with this condition, when combined with other requirements in this permit, will also ensure that source PM-10 emissions are less than 100 tons per year. Therefore 326 IAC 2-7 does not apply.

D.2.3 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 this facility and its control devices.

Compliance Determination Requirements

D.2.4 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

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

~~D.2.5 Visible Emissions Notations~~

~~(a) Daily visible emission notations of the stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. On and after the thirty-first day of operation, 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) The Compliance Response Plan for this facility shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.~~

~~D.2.6 Parametric Monitoring~~

~~The Permittee shall record the total static pressure drop across the control device at least once weekly when the facility is in operation. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the control device shall be maintained within the range recommended by the control device manufacturer or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.~~

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

~~D.2.7 Control Device Inspections~~

~~An inspection shall be performed of the control device as outlined in the preventive maintenance plan, but not less than once every six (6) months. All defective parts shall be repaired or replaced as necessary.~~

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

~~D.2.8 Record Keeping Requirements~~

~~(a) To document compliance with Conditions D.2.5 , D.2.6 and D.2.7, the Permittee shall maintain a log of daily visible emission observations, weekly pressure gage readings, operation and preventive maintenance logs (including work purchases orders), and those additional inspections prescribed by the Preventative Maintenance Plan.~~

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

~~D.2.9 Reporting Requirements~~

~~A semi-annual summary of the information to document compliance 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 period being reported.

SECTION D.3 FACILITY OPERATION CONDITIONS

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

(c) Boilers, consisting of:

(1) Two (2) natural gas fired boilers, identified as BLR-1701 A and B, each rated at 73.3 million British thermal units per hour.

Nitrogen oxide emissions from BLR-1701 A and B are controlled by low-NOX burners rated at 0.035 pounds per million British thermal units heat input, then exhausted through emission point EP-4.

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

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

D.3.1 Particulate Emission Limitations For Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, particulate matter (PM) emissions shall not exceed 0.30 pounds per million British thermal units of heat input.

D.3.2 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.

Compliance Determination Requirement

D.3.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

The Permittee is not required to test this facility by this permit.

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

D.3.4 Monitoring Not Required

There are no applicable compliance monitoring conditions for this facility.

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

D.3.5 NSPS Record Keeping Requirement [326 IAC 12] [40 CFR 48c]

Pursuant to 40 CFR 48c(g), the Permittee shall record and maintain records of the amounts of fuel combusted during each day for BLR-1701 A and B, unless U.S. EPA modifies this requirement via authority in 40 CFR 60.13(i). Records shall be kept for a minimum period of two (2) years after such record is made.

D.3.6 NSPS Reporting Requirement [326 IAC 12] [40 CFR 48c]

Pursuant to the New Source Performance Standards (NSPS), Part 60.48c, Subpart Dc, the Permittee is hereby advised of the requirement to report the following at the appropriate times:

(a) Commencement of construction date (no later than 30 days after such date).

(b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date).

(c) Actual start-up date (within 15 days after such date).

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM, OAQ. The requirements of 40 CFR Part 60 are also federally enforceable.

SECTION D.4 FACILITY OPERATION CONDITIONS

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

(d) Mashing, Cooking and Liquefication Operations, consisting of:

(1) Meal conveying operations.

(2) One (1) mash mingler, where water is added to grain meal to form mash.

(3) One (1) mash mix tank, where ammonia is added to mash as needed to adjust pH levels.

(4) One (1) jet cooker, where steam is injected to sterilize mash and gelatinize starch.

(5) One (1) liquefication tank, which cools mash after cooking.

Vapors from the liquefication tank are recycled to the Evaporation Operations.

(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.4.1 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be minimized by enclosure of meal conveying operations and redirection of vapors from the liquefication tank to the Evaporation Operations.

Compliance Determination Requirements

D.4.2 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

The Permittee is not required to test this facility by this permit.

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

D.4.3 Monitoring Not Required

There are no applicable compliance monitoring conditions for this facility.

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

~~D.4.4 Record Keeping Requirements~~

~~There are no specific record keeping requirements for this facility.~~

~~D.4.5 Reporting Requirements~~

~~There are no specific reporting requirements for this facility.~~

SECTION D.52 FACILITY OPERATION CONDITIONS

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

~~(e) The Fermentation and Clean-in-Place (CIP) System, consisting of:~~

~~(1) Four (4) fermenters, including pumps and coolers, which ferment mash into beer. Carbon dioxide and ethanol vapors are emitted by this process.~~

~~(2) One (1) ethanol absorption column, identified as EAC-1, which recovers ethanol vapors from the fermenters and from the beer stills in the Distillation and Dehydration Operations.~~

~~(3) One (1) natural gas fired regenerative thermal oxidation (RTO) unit, rated at 0.63 million British thermal units per hour and 95% destruction efficiency.~~

~~(4) The Clean-in-Place (CIP) System, which cleans and sterilizes fermenting equipment.~~

~~(5) Associated pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.~~

~~Volatile organic compound emissions that are not successfully recovered by the ethanol absorption column are controlled by the RTO unit, then exhausted through emission point EP-6.~~

(e) One (1) fermentation process, identified as P40, to be constructed in 2005, with a maximum throughput rate of 6,500 gallons per hour, consisting of four (4) fermenters and one (1) beer well system, controlled by a CO_2 scrubber C40, and exhausting through stack S40.

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

D.2.1 VOC and HAP Emissions [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following for the fermentation process:

(a) The ethanol production rate shall not exceed 50 million gallons (MMgal) per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) VOC emissions shall not exceed 1.8 pounds per 1,000 gallons of ethanol produced.

(c) Single HAP emissions shall not exceed 0.245 pounds per 1,000 gallons of ethanol produced.

(d) Total HAP emissions shall not exceed 0.271 pounds per 1,000 gallons of ethanol produced.

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

D.5.1**2.2** Best Available Control Technology [326 IAC 8-1-6] ~~[326 IAC 2-8]~~

Pursuant to 326 IAC 8-1-6 (General Reduction Requirements), the **Permittee shall control the fermentation process with a** BACT (~~b~~**B**est ~~a~~**A**vailable ~~c~~**C**ontrol ~~t~~**T**echnology) ~~requirements apply.~~ **which has been determined to be the following:**

~~For this facility, BACT has been determined to be the use of one (1) natural gas fired regenerative thermal oxidation (RTO) unit, rated at 0.63 million British thermal units per hour and a minimum 95% destruction efficiency. All volatile organic compound emissions that are not successfully recovered by the ethanol absorption column shall be controlled by the RTO unit.~~

~~Furthermore, emissions of volatile organic compounds (VOC) from the RTO unit shall not exceed 0.3 pounds per hour. This condition, when combined with other requirements in this permit, limits source VOC emissions to less than 100 tons per year. Therefore 326 IAC 2-7 does not apply.~~

(a) The VOC emissions from the fermentation process shall be controlled by wet scrubber C40.

(b) The control efficiency for the wet scrubber C40 shall be at least 98%; or the outlet VOC concentration shall not exceed 20 ppmv when the inlet VOC concentration is lower than 200 ppmv.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) VOC emissions from wet scrubber C40 shall not exceed 1.8 pounds per 1,000 gallons of ethanol produced.

~~D.5.2 Control Device Required for Volatile Organic Compounds (VOC)~~

~~The control device for VOC control shall be in operation at all times whenever an emission unit that it controls is in operation.~~

~~D.5.3 New Source Performance Standards [326 IAC 12] [40 CFR 60]~~

~~Pursuant to 326 IAC 12 (40 CFR 60, Subpart VV) the Permittee shall satisfy the requirements of 40 CFR 60.482 through 60.487, as applicable, for equipment leaks from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.~~

D.5.4**2.3** 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 this facility and its control device.

D.2.4 VOC and HAP Control

In order to comply with Conditions D.2.1 and D.2.2, wet scrubber C40 shall be in operation and control emissions from the fermentation process at all times that this process is in operation.

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

Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after commencing operation, the Permittee shall conduct a performance test to ~~verify VOC control efficiency~~ **perform VOC (including emission rate and overall control efficiency) and HAP testing** for ~~the RTO unit~~ **scrubber C40** utilizing methods as approved by the Commissioner. ~~This~~ **These** test**s** shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

~~(a) The Permittee shall conduct performance tests for equipment leaks in accordance with 40 CFR 60 Subpart VV, as applicable.~~

~~D.5.6 Thermal Oxidizer Temperature~~

~~(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature. The output of this system shall be recorded as an hourly average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the RTO unit at or above the hourly average temperature of 1400 ^{0}F.~~

~~(b) The Permittee shall determine the hourly average temperature, from the most recent valid stack test, that demonstrates compliance with limits in Condition D.1.1, as approved by IDEM.~~

~~(c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the hourly average temperature that demonstrates compliance with limits in Condition D.1.1.~~

D.5.7**2.6** Parametric Monitoring ~~[326 IAC 12][40 CFR 60]~~

~~(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 Condition D.1.1. 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.~~

~~(c) The Permittee shall develop and conduct a monitoring program for this facility addressing equipment leaks in accordance with 40 CFR 60 Subpart VV, as applicable.~~

The Permittee shall monitor and record the flow rate of scrubber C40 at least once per day when the fermentation process is in operation. When for any one reading the flow rate of the scrubber is less than the minimum of 35 gallons per minute, or a minimum flow established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Implementation, Preparation, Records, and Reports. 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 - Compliance Response Plan - Preparation, Implementation, Records, and Reports shall be considered a deviation from this permit.

The instruments used for determining the flow rate shall comply with Section C - Pressure Gauge and Other 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.2.7 Scrubber Inspections

An external inspection shall be performed each calendar quarter of the scrubber controlling the fermentation process. Inspections required by this condition shall not be performed in consecutive months.

D.~~5.8~~**2.8** Record Keeping Requirements ~~[326 IAC 12] [40 CFR 60]~~

~~(a) To document compliance with Conditions D.1.1 and D.1.7, the Permittee shall maintain the following records:~~

~~(1) The continuous temperature records (on an hourly average basis) for the thermal oxidizer and the hourly average temperature used to demonstrate compliance during the most recent compliant stack test.~~

~~(2) Daily records of the duct pressure or fan amperage.~~

(a) To document compliance with Condition D.2.1(a), the Permittee shall maintain monthly records of the total ethanol production rate.

(b) To document compliance with Condition D.2.6, the Permittee shall maintain once per day records of flow rate for scrubber C40 during normal operation.

(c) To document compliance with Condition D.2.7, the Permittee shall maintain records of the results of the inspections required under Condition D.2.7.

(~~b~~**d**) To document compliance with Condition D.~~5.4~~**2.3**, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

~~(c) To document compliance with Condition D.1.7(c), the Permittee shall maintain records for equipment leaks within this facility in accordance with 40 CFR 60 Subpart VV, as applicable.~~

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

D.2.9 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1(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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.6~~3~~ FACILITY OPERATION CONDITIONS

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

(f) One (1) recuperative thermal oxidizer/heat recovery steam generator, identified as C10, to be constructed in 2005, using natural gas and process waste gases from the dryers as fuels, with a maximum heat input capacity of 125 MMBtu/hr, and exhausting through stack S10.

(~~d~~**g**) **One (1)** ~~M~~**m**ashing, ~~C~~**c**ooking and ~~L~~**l**iquefication ~~O~~**o**peration~~s~~, ~~consisting of~~: **identified as P10, to be constructed in 2005, with a maximum wet dryer feed rate of 48 tons of wet cake (with 65% water) per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, consisting of the following:**

(1) Meal conveying operations.

(2) One (1) mash ~~mingler~~ **mixer**, where process water and/or hot water is added to meal to form mash.

(3) ~~One (1)~~ **Two (2) slurry** ~~mash mix~~ tank**s**, where ammonia is added to mash as needed to adjust pH levels**, each with a maximum capacity of 16,000 gallons**.

(4) One (1) ~~jet cooker~~ **cook tube**, where steam is injected to sterilize mash and gelatinize starch**, with a maximum capacity of 5,000 gallons**.

(5) One (1) flash tank, with a maximum capacity of 2,000 gallons.

(6) One (1) receiver tank.

(7) One (1) yeast tank, with a maximum capacity of 21,000 gallons.

~~(5) One (1) liquefication tank, which cools mash after cooking.~~

~~Vapors from the liquefication tank are recycled to the Evaporation Operations.~~

(~~f~~**h**) **One (1)** ~~D~~**d**istillation and ~~D~~**d**ehydration ~~O~~**o**peration~~s~~, ~~consisting of~~ **to be constructed in 2005, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, exhausting through stack S10, and consisting of**:

(1) One (1) beer column.
(2) One (1) side stripper.
(3) One (1) rectifier column.
(4) One (1) 190 proof condenser.
(5) Three (3) molecular sieves.
(6) One (1) 200 proof condenser.
(7) Three (3) centrifuges.
(8) One (1) centrate storage tank, with a maximum capacity of 990 gallons.
(9) Eight (8) evaporators.

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

(i) Two (2) natural gas fired DDGS dryers in series, identified as Dryers A and B, each with a maximum heat input capacity of 42 MMBtu/hr and a maximum throughput rate of 20 tons of DDGS per hour, controlled by recuperative thermal oxidizer/heat recovery steam generator C10, and exhausting through stack S10.

~~(1) One (1) beer well, which serves as a surge tank for beer.~~

~~(2) One (1) beer well agitator, which keeps solids from settling in the beer well.~~

~~(3) One (1) beer preheat train, utilizing hot vapors from the beer stills for heat input.~~

~~(4) Two (2) beer stills, which remove ethanol from beer, producing stillage as a byproduct. Noncondensible ethanol vapors and hydrous ethanol vapors are emitted from this process.~~

~~(5) One (1) stillage storage tank.~~

~~(6) Molecular sieve units, which remove water from superheated hydrous ethanol vapors. Superheating is done with process steam.~~

~~(7) One (1) molecular sieve cooler, which cools anhydrous ethanol vapors into liquid form.~~

~~(8) Associated pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.~~

~~Noncondensible ethanol vapors from the beer stills are directed to the ethanol absorption column in the Fermentation and Clean-in-Place (CIP) System for recovery. Volatile organic compound emissions that are not successfully recovered by the ethanol absorption column are controlled by the RTO unit, then exhausted through emission point EP-6.~~

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

D.3.1 PM Emissions [326 IAC 2-2]

The PM emissions from recuperative thermal oxidizer/heat recovery steam generator C10, which is used to control the DDGS dryers and distillation and dehydration process, shall not exceed 0.2 pounds per ton of DDGS produced.

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

D.3.2 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2]

(a) The DDGS production rate shall not exceed 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) PM10 emissions shall not exceed 3.70 lbs/hr or 0.2 pounds per ton of DDGS produced.

(c) VOC emissions shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced.

(d) SO_2 emissions shall not exceed 8.52 lbs/hr or 0.46 pounds per ton of DDGS produced.

(e) CO emissions shall not exceed 22.2 lbs/hr or 1.2 pounds per ton of DDGS produced.

(f) NOx emissions shall not exceed 20.9 lbs/hr.

(g) Total HAP emissions shall not exceed 0.39 lbs/hr or 0.021 pounds per ton of DDGS produced.

Combined with the emissions from other emission units, the PM10, VOC, SO_2, CO, and NOx emissions from the entire source are each limited to less than 100 tons/yr, the HAPs 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.~~6.1~~**3.3** Best Available Control Technology [326 IAC 8-1-6] ~~[326 IAC 2-8]~~

Pursuant to 326 IAC 8-1-6 (General Reduction Requirements), the **Permittee shall control the VOC emissions from the DDGS dryers and the distillation and dehydration process with a** BACT (~~b~~**B**est ~~a~~**A**vailable ~~c~~**C**ontrol ~~t~~**T**echnology) ~~requirements apply.~~ **which**

~~For this facility, BACT~~ has been determined to be the following:

~~(a) All condensible ethanol vapors shall be directed to the molecular sieve units, which remove water from superheated hydrous ethanol vapors, then directed to the molecular sieve cooler, which cools the anhydrous ethanol vapors into liquid form. No condensible ethanol shall be emitted.~~

~~(b) Noncondensible ethanol vapors shall be directed to the ethanol absorption column in the Fermentation and Clean-in-Place (CIP) System, listed in Section D.5 of this permit, for recovery.~~

(a) The VOC emissions from the distillation and dehydration process and DDGS dyers shall be controlled by recuperative thermal oxidizer/heat recovery steam generator C10.

(b) The destruction efficiency for recuperative thermal oxidizer/heat recovery steam generator C10 shall be at least 98%.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10) shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced.

D.3.4 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to recuperative thermal oxidizer/heat recovery steam generator C10, except when otherwise specified in 40 CFR Part 60, Subpart Db.

D.3.5 NOx Emissions [326 IAC 12-1][40 CFR 60, Subpart Db]

(a) Pursuant to 40 CFR 60.44b, the NOx emissions from thermal oxidizer/heat recovery steam generator C10 shall not exceed 0.1 lbs/MMBtu.

(b) Pursuant to 40 CFR 60.48b(g)(2), the Permittee shall monitor the operating conditions for thermal oxidizer/heat recovery steam generator C10 and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to 40 CFR 60.49b(c).

D.3.6 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.3.7 except when otherwise specified in 40 CFR 60, Subpart VV.

~~This condition, when combined with other requirements in this permit, limits source VOC emissions to less than 100 tons per year. Therefore 326 IAC 2-7 does not apply.~~

~~D.6.2 Control Device Required for Volatile Organic Compounds (VOC)~~

~~The control device for VOC control shall be in operation at all times whenever an emission unit that it controls is in operation.~~

D.~~6.3~~**3.7** New Source Performance Standards [326 IAC 12] [40 CFR 60]

Pursuant to 326 IAC 12 (40 CFR 60, Subpart VV) the Permittee shall satisfy the requirements of 40 CFR 60.482 through 60.487, as applicable **and listed in Section E.1**, for equipment leaks from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors in VOC service.

D.3.8 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from the 125 MMBtu per hour heat input recuperative thermal oxidizer/heat recovery steam generator (C10) shall be limited to 0.31 pounds per MMBtu heat input.

The limit was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

D.3.9 Particulate Emission Limitations [326 IAC 6-3-2]

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:

Process Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Mashing, Cooking, and Liquefaction Operation	42	44.2
Each of the DDGS Dryers	20	30.5

The pounds per hour limitations were calculated using one of the following equations:

Interpolation and extrapolation 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**

D.~~6.4~~**3.10** 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 its control devices.

D.3.11 VOC and HAP Control

In order to comply with Conditions D.3.2 and D.3.3, the recuperative thermal oxidizer/heat recovery steam generator (C10) shall be in operation and control emissions from the DDGS dryers and the distillation and dehydration process at all times that these units are in operation.

D.~~6.5~~**3.12** Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11] **[40 CFR 60 Subpart Db] [326 IAC 2-2]**

~~(a) The Permittee is not required to test the molecular sieve units or the molecular sieve cooler by this permit. However, IDEM may require compliance testing when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance shall be determined by a performance test conducted in accordance with Section C - Performance Testing.~~

~~(b) The Permittee is required to test the RTO unit in accordance with Section D.5 of this permit.~~

~~(c) The Permittee shall conduct performance tests for equipment leaks in accordance with 40 CFR 60 Subpart VV, as applicable.~~

(a) Pursuant to 40 CFR 60.46(b)(c) and in order to demonstrate compliance with Conditions D.3.2(f) and D.3.5(a), the Permittee shall perform NOx testing for thermal oxidizer/heat recovery steam generator C10 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

(b) In order to demonstrate compliance with Conditions D.3.1, D.3.2, D.3.3, D.3.8, and D.3.9, and the Permittee shall perform PM, PM10, VOC (including emission rate and overall control efficiency), SO_2, CO, and HAP testing for recuperative thermal oxidizer/heat recovery steam generator C10 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. 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.3.13 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from stack S10 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.3.14 Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the recuperative thermal oxidizer/heat recovery steam generator C10 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 1,450E F.

(b) The Permittee shall determine the hourly average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.3.2 and D.3.3, as approved by IDEM.

(c) 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.

D.3.15 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.3.2 and D.3.3, as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the recuperative thermal oxidizer/heat recovery steam generator (C10) 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.

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

D.3.16 Record Keeping Requirements

(a) To document compliance with Condition D.3.2(a), the Permittee shall maintain monthly records of the weight of DDGS produced.

(b) To document compliance with Condition D.3.5, the Permittee shall maintain records of the operating parameters as specified in a plan submitted pursuant to 40 CFR 60.49b(c) for the recuperative thermal oxidizer/heat recovery steam generator (C10). These records shall be sufficient to estimate the NOx emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10).

(c) To document compliance with Condition D.3.13, the Permittee shall maintain records of daily visible emission notations of the stack S10.

(d) To document compliance with Condition D.3.14, the Permittee shall maintain continuous temperature records for the thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(e) To document compliance with Condition D.3.15, the Permittee shall maintain daily records of the duct pressure or fan amperage for the thermal oxidizer/heat recovery steam generator.

(f) To document compliance with Condition D.3.10, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

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

D.3.17 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.2(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 "responsible official" as defined by 326 IAC 2-7-1(34).

D.3.18 Recordkeeping Requirements [40 CFR 60, Subpart Db] [326 IAC 12]

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

(b) Pursuant to 40 CFR 60.49b(g), the Permittee shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date.

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

(3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each steam generating unit operating

day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.

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

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

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

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

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

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

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

D.3.19 Reporting Requirements [40 CFR 60, Subpart Db] [326 IAC 12]

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

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

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

(d) Pursuant to 40 CFR 60.49b(i), the Permittee shall submit reports containing the information recorded under 40 CFR 60.49b(g) and Condition D.4.24(b).

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

submitting reports in the electronic format, the Permittee shall coordinate with IDEM, OAQ to obtain their agreement to submit reports in this alternative format.

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

~~D.6.6 Thermal Oxidizer Temperature~~

~~The Permittee is required to operate the RTO unit in accordance with Section D.5 of this permit.~~

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

~~D.6.7 Parametric Monitoring [326 IAC 12][40 CFR 60]~~

~~(a) The Permittee is required to monitor the RTO unit in accordance with Section D.5 of this permit.~~

~~(b) The Permittee shall develop and conduct a monitoring program for this facility addressing equipment leaks in accordance with 40 CFR 60 Subpart VV, as applicable.~~

~~**Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]**~~

~~D.6.8 Record Keeping Requirements [326 IAC 12][40 CFR 60]~~

~~(a) The Permittee is required to maintain records for the RTO unit in accordance with Section D.5 of this permit.~~

~~(b) The Permittee shall maintain records for equipment leaks within this facility in accordance with 40 CFR 60 Subpart VV, as applicable.~~

SECTION D.4 FACILITY OPERATION CONDITIONS

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

(j) One (1) ethanol loading terminal for both trucks and railcars, identified as P50, to be constructed in 2005, with a maximum loading rate of 36,000 gallons per hour for truck loading and a maximum loading rate of 72,000 gallons per hour for railcar loading. The truck loading process is controlled by an open flare C50, which is fueled by natural gas and has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausting through stack S50.

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

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following emission limits for the ethanol loading terminal:

(a) The total ethanol loadout rate (including trucks and railcars) shall not exceed 50 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The truck loadout process shall not exceed 2.5 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The VOC/HAP emissions from the flare C50 shall not exceed 0.69 lbs/hr.

(c) CO emissions from flare C50 shall not exceed 0.13 lbs/kgal.

(d) NOx emissions from flare C50 shall not exceed 0.10 lbs/kgal.

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

D.4.2 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall collect and control the VOC emissions from the ethanol loading terminal, when loading ethanol to trucks, 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 terminal shall be collected and controlled by open flare C50 when loading denatured ethanol to trucks.

(b) The overall control efficiency (including destruction efficiency and capture efficiency) for flare C50 shall be at least 98%.

(c) The VOC emissions from the flare C50 shall not exceed 0.69 lbs/hr.

D.4.3 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.4.4 except when otherwise specified in 40 CFR 60, Subpart VV.

D.4.4 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.4.5 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.4.6 VOC and HAP Control

In order to comply with Conditions D.4.1(c) and D.4.2, flare C50 shall be in operation and control emissions from the ethanol loading terminal at all times when this unit is loading ethanol to trucks.

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

D.4.7 Flare Pilot Flame

In order to comply with Conditions D.4.1 and D.4.2, the Permittee shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading terminal is in operation and is loading ethanol to trucks.

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

D.4.8 Record Keeping Requirements

(a) To document compliance with Condition D.4.1(a), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out.

(b) To document compliance with Condition D.4.1(b), the Permittee shall maintain monthly records of the amount of denatured ethanol loaded out to trucks.

(c) To document compliance with Condition D.4.8, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading terminal is in operation and is loading ethanol to trucks.

(d) To document compliance with Condition D.4.5, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

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

D.4.9 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.4.1(a) and (b) 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.5 FACILITY OPERATION CONDITIONS

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

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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:

(10) Two (2) methanators, used to clean up the contact waste water that will be recirculated back into the cook tank, exhausting to the DDGS dryers as supplement fuel. When the dryers are down, methane emissions from the methanators are controlled by flare C60, which has a maximum heat input capacity of 3.2 MMBtu/hr and exhausts through stack S60.

(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.5.1 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP), the operating hours of the biomethanator flare EP-15 shall be less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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

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

D.5.2 Record Keeping Requirements

(a) To document compliance with Condition D.5.1, the Permittee shall maintain monthly records of the operating hours of the biomethanator flare EP-15.

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

D.5.3 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.5.1 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 "responsible official" as defined by 326 IAC 2-7-1(34).

~~**SECTION D.7 FACILITY OPERATION CONDITIONS**~~

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

~~(g) Centrifugation Operations, consisting of:~~

~~(1) Five (5) stillage centrifuges, which split stillage into solids, identified as cake, and liquids which contain dissolved solids, identified as centrate.~~

~~(2) Cake conveying operations~~

~~(3) One (1) centrate storage tank.~~

~~(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.7.1 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]~~

~~Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be minimized by conveying the cake while it remains moist.~~

~~**Compliance Determination Requirements**~~

~~D.7.2 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]~~

~~The Permittee is not required to test this facility by this permit.~~

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

~~D.7.3 Monitoring Not Required~~

~~There are no applicable compliance monitoring conditions for this facility.~~

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

~~D.7.4 Record Keeping Requirements~~

~~There are no specific record keeping requirements for this facility.~~

~~D.7.5 Reporting Requirements~~

~~There are no specific reporting requirements for this facility.~~

SECTION D.~~8~~6 FACILITY OPERATION CONDITIONS

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

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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:

D.~~8~~**6**.1 New Source Performance Standards [326 IAC 12][40 CFR 60 Subpart Kb]

Pursuant to 40 CFR Part 60.112b(a)(1), the Permittee shall equip storage tanks ~~TK-801A, TK-801B, TK-803, TK-805 and TK-807~~ **TK 61 through TK 65** with an internal floating roof meeting the following specifications:

. . .

D.~~8~~**6**.2 New Source Performance Standards [326 IAC 12][40 CFR 60 Subpart VV]

D.~~8~~**6**.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11][326 IAC 12][40 CFR 60.113b(a)(1)]

D.~~8~~**6**.4 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11][326 IAC 12][40 CFR 60 Subpart VV]

D.~~8~~**6**.5 Parametric Monitoring [326 IAC 12][40 CFR 60 Subpart VV]

D.~~8~~**6**.6 NSPS Reporting Requirements [40 CFR 60.113b(a)(5)][40 CFR 60.115b(a)(3) and (4)]

(a) The Permittee shall notify OAQ in writing at least 30 days prior to
(1) an initial filling, or

(2) a refilling after a complete emptying

of storage tanks ~~TK-801A, TK-801B, TK-803, TK-805 or TK-807~~ **TK 61 through TK 65** to afford OAQ the opportunity to have an observer present.

...

(c) If any of the conditions described in Condition D.~~1.2~~**6.3**(c) are detected during the annual visual inspection, a report shall be furnished to OAQ 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.

(d) After each inspection required by Condition D.~~1.2~~**6.3**(d) 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 Condition D.~~1.2~~**6.3**(d), a report shall be furnished to OAQ within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications and list each repair made.

D.~~8~~**6**.7 Record Keeping Requirements [40 CFR 115b(a)]

(a) After installing control equipment in accordance with Condition D.~~1.1~~**6.1**, the Permittee shall keep a record of each inspection performed as required by Condition D.~~1.2~~**6.3**. 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).

(b) For storage tanks ~~TK-801A, TK-801B, TK-803, TK-805 and TK-807~~ **TK 61 through TK 65**, the Permittee shall keep readily-accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel, for the life of each vessel.

(c) The Permittee shall maintain records for equipment leaks within this facility in accordance with 40 CFR 60 Subpart VV, as applicable.

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

D.~~8~~**6**.8 Reporting Requirements [40 CFR 115b(a)(1)]

After installing control equipment in accordance with Condition D.~~1~~**6**.1, the Permittee shall furnish OAQ with a report that describes the control equipment and certifies that the control equipment meets the specifications of 40 CFR 60.112b(a)(1) and 40 CFR 60.113b(a)(1). This report shall be an attachment to the notification required by Condition D.~~1.3~~**6.6**.

~~**SECTION D.9 FACILITY OPERATION CONDITIONS**~~

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

~~(i) Distiller's Dry Grain with Solubles (DDGS) Drying Operations, consisting of:~~

~~(1) One (1) blender, which combines cake with CDS syrup.~~

~~(2) One (1) natural gas fired DDGS dryer, identified as DR-8XX, rated at 67 million British thermal units per hour. Nitrogen oxide emissions are controlled by low-NOX burners rated at 0.035 pounds per million British thermal units heat input, then exhausted through emission point EP-9.~~

~~(3) DDGS storage bins.~~

~~(4) Truck loadout operations. Particulate emissions are exhausted through emission point EP-10.~~

~~Volatile organic compound emissions from the DDGS Dryer are controlled by using the airflow as intake air for the dryer's burner flame. Emissions are then exhausted through emission point EP-9.~~

~~(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.9.1 Particulate Matter (PM) [326 IAC 6-3-2(c)] [326 IAC 2-8]~~

~~PM and PM-10 emissions from Dryer DR-8XX shall be limited to 9.0 pounds per hour of PM or PM-10. Compliance with this condition will ensure that PM emissions are in compliance with 326 IAC 6-3-2(c). Compliance with this condition, when combined with other requirements in this permit, will also ensure that source PM-10 emissions are less than 100 tons per year. Therefore 326 IAC 2-2 and 326 IAC 2-7 do not apply.~~

~~D.9.2 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]~~

~~Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be minimized by the following:~~

~~(a) Enclosing truck loadout operations inside a building; and~~

~~(b) Leaving sufficient moisture in the cake after drying to avoid visible emissions during truck loadout operations.~~

~~D.9.3 Best Available Control Technology [326 IAC 8-1-6] [326 IAC 2-8]~~

~~Pursuant to 326 IAC 8-1-6 (General Reduction Requirements), the BACT (best available control technology) requirements apply.~~

~~For this facility, BACT has been determined to be the following:~~

~~(a) Approximately 10% of the dryer exhaust airflow shall be used as intake air for the dryer's burners at any time, allowing the VOC to be combusted as supplemental fuel.~~

~~(b) The remainder of the dryer exhaust airflow shall be recycled in a semi-closed-loop system until it is ready to be used as intake air for the dryer's burners. All dryer exhaust shall eventually pass through the dryer's burners.~~

~~(c) The dryer flame shall attain a minimum of 95% VOC destruction efficiency.~~

~~(d) Total VOC mass emissions after combustion by the dryer flame shall be limited to 10.9 pounds per hour.~~

~~This condition, when combined with other requirements in this permit, limits source VOC emissions to less than 100 tons per year. Therefore 326 IAC 2-7 does not apply.~~

~~D.9.4 Hazardous Air Pollutants (HAPs) [326 IAC 2-4.1] [326 IAC 2-8]~~

~~(a) Total emissions of HAP from Dryer DR-8XX shall be controlled to 5.0 pounds per hour or less by using the dryer exhaust airflow as intake air for the dryer's burner flame.~~

~~(b) Emissions of any single HAP from Dryer DR-8XX shall be controlled to 2.2 pounds per hour or less by using the dryer exhaust airflow as intake air for the dryer's burner flame.~~

~~This condition limits total source HAP emissions to less than 25 tons per year and limits source HAP emissions of any single HAP to less than 10 tons per year. Therefore, 326 IAC 2-7 does not apply and the maximum achievable control technology (MACT) requirement in 326 IAC 2-4.1-1 (New Source Toxics Control) does not apply.~~

~~D.9.5 Control Device Required for Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAPs)~~

~~The dryer burners shall be in operation at all times whenever Dryer DR-8XX is in operation or whenever airflow is being recycled and has not yet exited the semi-closed loop system. Compliance with this condition, when combined with other requirements in this permit, will ensure compliance with Condition C.1 in this permit.~~

~~D.9.6 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 Dryer DR-8XX.~~

~~Compliance Determination Requirements~~

~~D.9.7 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]~~

~~(a) Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after commencing operation, the Permittee shall perform testing for PM and PM-10, volatile organic compounds, and HAPs on Dryer DR-8XX utilizing EPA methods approved by the Commissioner.~~

~~(b) PM-10 is the sum of filterable and condensible PM-10. For test methods that cannot differentiate between PM and PM-10, filterable PM-10 is assumed at 100% of filterable PM.~~

~~(c) The VOC test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their concentration, and on a consideration~~

of the potential presence of interfering gases. The VOC testing shall evaluate, at a minimum, the following:

(1) Ethanol.

(2) Acetic Acid.

(3) Lactic Acid.

(4) 2-furfuraldehyde.

(5) Acetaldehyde.

(6) Acrolein.

(7) Formaldehyde.

(8) Methanol.

(9) Total VOC mass emissions.

(d) The tests on Dryer DR-8XX shall be repeated at intervals no longer than five (5) years from the date of the previous compliance demonstration.

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

D.9.8 Visible Emissions Notations

(a) Daily visible emission notations of the stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. On and after the thirty-first day of operation, 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) The Compliance Response Plan for this facility shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

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

D.9.9 Record Keeping Requirements

(a) To document compliance with Condition D.1.7, the Permittee shall maintain a log of daily visible emission observations, operation and preventive maintenance logs (including work purchases orders), and those additional inspections prescribed by the Preventative Maintenance Plan.

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

~~D.9.10 Reporting Requirements~~

~~A semi-annual summary of the information to document compliance 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 period being reported.~~

SECTION D.7 FACILITY OPERATION CONDITIONS

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

(a) Combustion source flame safety purging on startup.

(b) A gasoline fuel transfer dispensing operation handling less than or equal to 1,300 gallons per day and filling storage tanks having a capacity equal to or less than 10,500 gallons.

(c) A petroleum fuel other than gasoline dispensing facility, having a storage tank capacity less than or equal to 10,500 gallons, and dispensing 3,500 gallons per day or less.

(d) Cleaners and solvents characterized as:

(1) having a vapor pressure equal to or less than two (2.0) kilo Pascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch) measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or

(2) having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit);

the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.

(e) One (1) process cooling tower, identified as P80, with a maximum water circulation rate of 1,200,00 gallons per hour, consisting of four (4) cells.

(f) Blowdown for any of the following:

(1) Sight glass.

(2) Boilers.

(3) Cooling tower.

(4) Compressors.

(5) Pumps.

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

(h) Heat exchanger cleaning and repair.

(j) Diesel fired emergency generators not exceeding 1,600 horsepower, including one (1) emergency diesel fired water pump, identified as EP-16, with a maximum power output of 190 hp.

(k) Filter or coalescer media changeout.

(l) Other emission units, not regulated by a NESHAP, with PM10, NO_x, 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:

(6) One (1) syrup tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(7) One (1) cook water tank, constructed in 2005, with a maximum capacity of 146,000 gallons.

(8) Two (2) liquefaction tanks, constructed in 2005, each with a maximum capacity of 51,000 gallons.

(9) One (1) whole stillage tank, constructed in 2005, with a maximum capacity of 51,000 gallons.

(11) Heat exchangers, identified as mash coolers, which are part of the mashing, cooking and liquefaction operations.

(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)]

There are no specific state or federal rules applicable to these emission units.

SECTION E.1 40 CFR 60, Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

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

E.1.1 Standards: Pumps in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-2 (Standards: Pumps in Light Liquid Service), the Permittee shall comply with the following requirements:

(a) Each pump in light liquid service shall:

(1) be monitored monthly to detect leaks by the methods specified in Condition E.1.10, except as provided in this condition; and

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

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. If there are indications of liquids dripping from the pump seal, a leak is detected.

(c) 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 Condition E.1.9. 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 Condition E.1.1(a), provided the following requirements are met:

(1) Each dual mechanical seal system is:

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

(B) 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 Condition E.1.8; or

(C) 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) The following requirements are met:

(A) Each sensor as described in Condition E.1.1(d)(3) is checked daily or is equipped with an audible alarm;

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

(6) 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 Condition E.1.1(d)(5)(B), a leak is detected. 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 Condition E.1.9. A first attempt at repair shall be made no later than five (5) calendar days after each leak is detected.

(e) Any pump that is designated, as described in Condition E.1.11(d)(1) and (d)(2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Conditions E.1.1(a), (c), and (d) 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 Condition E.1.10(b), and

(3) Is tested for compliance with Condition E.1.1(e)(2) 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 Condition E.1.8, it is exempt from Conditions E.1.1(a) through (e).

(g) Any pump that is designated, as described in Condition E.1.11(e)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of Conditions E.1.1(a) and (d)(4) through (d)(6) if:

(1) The Permittee demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Condition E.1.1(a); and

(2) The Permittee 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 Condition E.1.1(c) 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 Conditions E.1.1(a)(2) and (d)(4), and the daily requirements of Condition E.1.1(d)(5), provided that each pump is visually inspected as often as practicable and at least monthly.

E.1.2 Standards: Pressure Relief Devices in Gas/Vapor Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-4 (Standards: Pressure Relief Devices in Gas/Vapor Service), the Permittee shall comply with the following requirements:

(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 Condition E.1.9(b).

(b) 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 five (5) calendar days after the pressure release, except as provided in Condition E.1.8. No later than five (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 Condition E.1.9(b).

(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 Condition E.1.7 is exempted from the requirements of Conditions E.1.2(a) and (b).

(d) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of Conditions E.1.2(a) and (b), provided after each pressure release, a new rupture disk is 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 Condition E.1.8.

E.1.3 Standards: Sampling Connection Systems [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-5 (Standards: Sampling Connection Systems), the Permittee shall comply with the following requirements:

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system. 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 Condition E.1.3(a) shall comply with the following requirements:

(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 Condition E.1.7; or

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

(A) 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;

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

(C) 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 Conditions E.1.3(a) and (b).

E.1.4 Standards: Open-Ended Valves or Lines [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-6 (Standards: Open-Ended Valves or Lines), the Permittee shall comply with the following requirements:

(a) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. 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 Condition E.1.4(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 Conditions E.1.4(a), (b) and (c).

(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 Conditions E.1.4(a) through (c) are exempt from the requirements of Conditions E.1.4(a) through (c).

E.1.5 Standards: Valves in Gas/Vapor Service and in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-7 (Standards: Valves in Gas/Vapor Service and in Light Liquid Service), the Permittee shall comply with the following requirements:

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in Condition E.1.9(a) and shall comply with Conditions E.1.5(b) through (e), except as provided in Conditions E.1.5(f), (g), and (h).

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

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

(d) 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 Condition E.1.8. A first attempt at repair shall be made no later than five (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 Condition E.1.10(d)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm

above background, is exempt from the requirements of Condition E.1.5(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 Condition E.1.9(b), and

(3) Is tested for compliance with Condition E.1.5(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 Condition E.1.10(e)(1), as an unsafe-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:

(1) The Permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Condition E.1.5(a), and

(2) The Permittee 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 Condition E.1.10(e)(2), as a difficult-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:

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

(2) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the Permittee designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

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

E.1.6 Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-8 (Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors), the Permittee shall comply with the following requirements:

(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 Permittee shall follow either one of the following procedures:

(1) The Permittee shall monitor the equipment within five (5) days by the method specified in Condition E.1.9(a) and shall comply with the requirements of Conditions E.1.6(b) through (d).

(2) The Permittee 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) 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 Condition E.1.8. 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 Condition E.1.5(e).

E.1.7 Standards: Closed Vent Systems and Control Devices [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-10 (Standards: Closed Vent Systems and Control Devices), the Permittee shall comply with the following requirements:

(a) For closed vent systems and control devices used to comply with the provisions of 40 CFR 60, Subpart VV, the Permittee shall comply with the provisions of this Condition.

(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 40 CFR 60.18.

(e) For control devices used to comply with the provisions of 40 CFR 60, Subpart VV, the Permittee shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in Conditions E.1.7(i) through (k), each closed vent system shall be inspected according to the procedures and schedule specified below:

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the Permittee shall comply with the requirements specified in Conditions E.1.7(f)(1)(A) and (f)(1)(B):

(A) Conduct an initial inspection according to the procedures in Condition E.1.9(a); and

(B) 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 Permittee shall:

(A) Conduct an initial inspection according to the procedures in Condition E.1.9(a); and

(B) Conduct annual inspections according to the procedures in Condition E.1.9(a).

(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 Condition E.1.7(h).

(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 Permittee 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 Condition E.1.7(f)(1)(A) and (f)(2).

(j) Any parts of the closed vent system that are designated, as described in Condition E.1.7(l)(1), as unsafe to inspect are exempt from the inspection requirements of Conditions E.1.7(f)(1)(A) and (f)(2) if they comply with the following requirements:

(1) The Permittee 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 Conditions E.1.7(f)(1)(A) or (f)(2); and

(2) The Permittee 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 Condition E.1.7(l)(2), as difficult to inspect are exempt from the inspection requirements of Conditions E.1.7(f)(1)(A) and (f)(2) if they comply with the requirements specified below:

(1) The Permittee 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 40 CFR 60.14 and 60.15, or the Permittee designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The Permittee 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 Permittee shall record the information specified below:

(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 Condition E.1.10(b).

(4) For each inspection conducted in accordance with Condition E.1.9(a) 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 Condition E.1.7(f)(1)(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.

(m) Closed vent systems and control devices used to comply with provisions of 40 CFR 60, Subpart VV shall be operated at all times when emissions may be vented to them.

E.1.8 Standards: Delay of Repair [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-9 (Standards: Delay of Repair), the Permittee shall comply with the following requirements:

(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 Permittee 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 Condition E.1.7.

(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.

Compliance Determination Requirements

E.1.9 Test Methods and Procedures [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.485 (Test Methods and Procedures), the Permittee shall comply with the following requirements:

(a) The Permittee shall determine compliance with the standards in Conditions E.1.1 through E.1.8 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:

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

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

(b) The Permittee shall determine compliance with the no detectable emission standards in Conditions E.1.1(e), E.1.2, and E.1.5(f) as follows:

(1) The requirements of Condition E.1.10(a) 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.

(c) The Permittee 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 in 40 CFR 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, Conditions E.1.9(c) (1) and (2) shall be used to resolve the disagreement.

(d) The Permittee shall demonstrate that 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 in 40 CFR 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.

(e) Samples used in conjunction with Conditions E.1.9(c), (d), and (f) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(f) The Permittee 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 (H_T) 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 in 40 CFR 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 in 40 CFR 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.

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

E.1.10 Recordkeeping Requirements [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.486 (Recordkeeping Requirements), the Permittee shall comply with the following requirements:

(a) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, 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 Condition E.1.6(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.

(b) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, the following information shall be recorded in a log 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 Condition E.1.10(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 employee 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.

(c) The following information pertaining to the design requirements for closed vent systems and control devices described in Condition E.1.7 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 Condition E.1.7(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 Conditions E.1.1, E.1.2, and E.1.3 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 Conditions E.1.1, E.1.2, and E.1.3.

(d) The following information pertaining to all equipment subject to the requirements in Conditions E.1.1 through E.1.8 and 40 CFR 60.482-1 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 40 CFR 60, Subpart VV.

(2) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of Conditions E.1.1(e) and E.1.5(f) and the designation of equipment as subject to the requirements of Conditions E.1.1(e) or E.1.5(f) shall be signed by the Permittee.

(3) A list of equipment identification numbers for pressure relief devices required to comply with Condition E.1.2.

(4) The following information:

(A) The dates of each compliance test as required in Conditions E.1.1(e), E.1.2, and E.1.5(f);

(B) The background level measured during each compliance test;

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

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

(e) The following information pertaining to all valves subject to the requirements of Conditions E.1.5(g) and (h) and to all pumps subject to the requirements of Conditions E.1.1(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.

(f) The following information shall be recorded for valves complying with Condition E.1.1:

(1) A schedule of monitoring.

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

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

(1) Design criterion required in Conditions E.1.1(d)(5) and explanation of the design criterion; and

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

(h) 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.

(i) The provisions of 40 CFR 60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

E.1.11 Reporting Requirements [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.487 (Reporting Requirements), the Permittee shall comply with the following requirements:

(a) The Permittee shall submit semiannual reports to the Administrator and IDEM.

(b) All semiannual reports to the Administrator shall include the following information, summarized from the information required in Condition E.1.10.

(1) Process unit identification.

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

(A) Number of valves for which leaks were detected as described in Condition E.1.5(b),

(B) Number of valves for which leaks were not repaired as required in Condition E.1.5(d),

(C) Number of pumps for which leaks were detected as described in Conditions E.1.1(b) and E.1.1(d)(6),

(D) Number of pumps for which leaks were not repaired as required in Conditions E.1.1(c) and E.1.1(d)(6),

(E) 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.

(c) Revisions to items reported in the initial semiannual report if changes have occurred since the initial report or subsequent revisions to the initial report.

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

FESOP Quarterly Report

Source Name: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037
Facility: Entire Source
Parameter: DDGS Production Rate
Limit: Less than 162,218 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

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

9 No deviation occurred in this quarter.

9 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: Iroquois Bio-Energy Company, LLC
Source Address: 751 W. State Road 114, Rensselaer Indiana 47978-7265
Mailing Address: P. O. Box 218, Rensselaer, Indiana 47978-0218
Permit No.: 073-16720-00037
Facility: Entire Source
Parameter: Total Ethanol Production Rate
Limit: Less than 50 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

YEAR: _____

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

9 No deviation occurred in this quarter.

9 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: **Iroquois Bio-Energy Company, LLC**
Source Address: **751 W. State Road 114, Rensselaer Indiana 47978-7265**
Mailing Address: **P. O. Box 218, Rensselaer, Indiana 47978-0218**
Permit No.: **073-16720-00037**
Facility: **Ethanol Loadout Terminal**
Parameter: **Ethanol Loadout Rate for Trucks**
Limit: **Less than 2.5 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.**

YEAR: _____

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

9 **No deviation occurred in this quarter.**

9 **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: **Iroquois Bio-Energy Company, LLC**
Source Address: **751 W. State Road 114, Rensselaer Indiana 47978-7265**
Mailing Address: **P. O. Box 218, Rensselaer, Indiana 47978-0218**
Permit No.: **073-16720-00037**
Facility: **Biomethanator Flare EP-15**
Parameter: **Operating Hours**
Limit: **Less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.**

YEAR: _____

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

9 **No deviation occurred in this quarter.**

9 **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.

Conclusion

This permit revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 073-20945-00037.

Appendix B
Best Available Control Technology (BACT) Determinations

Source Background and Description

Source Name:	Iroquois Bio-Energy Company, LLC
Source Location:	751 W. State Road 114, Rensselaer, Indiana 47978
County:	Jasper
SIC Code:	2869
Operating Permit No.:	F073-20945-00037
Operating Permit Issuance Date:	January 8, 2004
Significant Permit Revision No.:	073-20945-00037
Permit Reviewer:	ERG/YC

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) reviews for an 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; and
- Ethanol Loading Terminal.

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 loading terminal 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:

Iroquois Bio-Energy Company, LLC will use a fermentation process to produce ethanol from grain. The potential VOC emissions from this activity are estimated to be greater than 25 tons per year. Since this facility will be constructed after the January 1, 1980 applicability date and no other rules in 326 IAC 8 are applicable to this process, Iroquois Bio-Energy Company, LLC is required to implement BACT to comply with 326 IAC 8-1-6.

In F073-20945-00037, issued on January 8, 2004, the BACT for the fermentation process was determined to be the use of one regenerative thermal oxidation (RTO) unit with a minimum destruction efficiency of 95%. In addition, the VOC emissions from the RTO were limited to less than or equal to 0.3 lbs/hr. In the permit revision application received on March 11, 2005, the Permittee requested to install a single packed tower water scrubber with an overall control efficiency of 98% for VOC in place of the RTO.

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 VOC in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. Regulatory considerations dictate that the adsorbent 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 solvent used. However, other solvents are used dependent upon 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 the one whose VOC reduction efficiency is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated or chlorinated solvents), 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 higher than 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 the VOC without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 95%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

5. Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream application. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). A flare normally provides a VOC destruction efficiency greater than 98%.

6. Refrigeration Condenser:

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. A refrigeration condenser normally provides a VOC destruction 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Fermentation	Wet scrubber with a control efficiency of 97%. VOC emissions < 2.44 lbs/hr.	Under Construction.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Fermentation	Wet scrubber (packed tower). VOC Emissions < 7.4 lbs/hr.	Not Available.
Michigan Ethanol	MI-0359	11/04/02 (MI)	Fermentation	BACT determined to be a scrubber with 97% control efficiency and VOC emissions < 6.0 lbs/hr	97.4% (03/19/03)
Grain Processing Corporation	IN-0075	06/10/97 (IN)	Fermentation	Scrubber with 95% control efficiency.	Not Available.
Cargill, Inc.	NE-0016	04/25/96 (NE)	Fermentation	BACT determined to be a wet scrubber with a VOC emission limit of 11.8 lbs/hr.	Not Available.

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ eliminated carbon adsorption as not technically feasible for this type of operation. 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 (%)
Thermal Oxidizer	98
Flare	98
Wet Scrubber	98%*
Catalytic Oxidizer	95
Refrigeration Condenser	90

* Although previous permits (see tables in Step 1 of Appendix B.1) required wet scrubbers to achieve a minimum control efficiency less than 98%, the Permittee proposes to install a wet scrubber with control efficiency greater than 98% based on the manufacturer's information. The Permittee has provided engineering test data from a similar plant (Glacial Lake Energy Ethanol, Watertown, South Dakota; tested in August 2003) to show that the wet scrubber to be installed at this source will provide a control efficiency greater than 98%. Both the scrubber installed at Glacial Lake Energy Ethanol and the scrubber to be installed at Iroquois Bio-Energy Company, LLC. are manufactured by the same company (ICM, Inc.) Therefore, achieving 98% control efficiency is technically feasible for the wet scrubber which will be installed at Iroquois Bio-Energy Company, LLC.

Step 4 – Evaluate the Most Effective Controls and Document Results

Based on control efficiency, the thermal oxidizer, flare, and wet scrubber are the best control technologies which have highest control efficiencies.

Step 5 – Select BACT

The Permittee plans to recover carbon dioxide from the fermentation process, which can only be achieved using the wet scrubber. Both thermal oxidizers and flares destroy the carbon dioxide rather than recover it, and they also generate additional emissions from the combustion process. Therefore, Iroquois Bio-Energy Company, LLC proposed to used a single packed tower wet scrubber (C40) to control the VOC emissions from the fermentation process. This will allow them to recover carbon dioxide from the fermentation process and generate revenue from selling the recovered carbon dioxide.

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 by wet scrubber C40.

(b) The control efficiency for the wet scrubber C40 shall be at least 98%; or the outlet VOC concentration shall not exceed 20 ppmv when the inlet VOC concentration is lower than 200 ppmv.

Note that when the inlet VOC concentration is low, the scrubber will not be able to achieve a control efficiency of 98%. However, the scrubber manufacturer guarantees that the VOC outlet

concentration will be less than 20 ppmv or VOC emissions will be reduced by 98%. Therefore, the Permittee shall either comply with the VOC control efficiency requirement or comply with the VOC outlet concentration limits, depending on the inlet VOC concentrations. Compliance with these limits will be demonstrated by stack testing.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from wet scrubber C40 shall not exceed 1.8 pounds per 1,000 gallon of ethanol produced. With a maximum production rate of 6,500 gallons per hour of ethanol, this is equivalent to 11.7 lbs/hr of VOC emissions. The VOC emission limit was proposed by the Permittee and was derived from actual test data from other similar ethanol plants (Russell Plant and Badger State).

Appendix B.2
Best Available Control Technology (BACT) Determination
For Distillation and Dehydration Process

Introduction:

Iroquois Bio-Energy Company, LLC will use distillation to concentrate the ethanol produced in the fermentation process. The potential VOC emissions from the distillation and dehydration 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 no other rules in 326 IAC 8 are applicable to this process, Iroquois Bio-Energy Company, LLC is required to implement BACT to comply with 326 IAC 8-1-6.

In the permit revision application received on March 11, 2005, the Permittee requested to use recuperative thermal oxidizer/recovery steam generator (C10) with a destruction efficiency of 98% to control the emission from the distillation and dehydration process. The proposed recuperative thermal oxidizer/heat recovery steam generator (C10) will also be used to control the emissions from the DDGS dryers.

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 detail 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 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 lbs/hr.	Under Construction.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available.
Michigan Ethanol	MI-0359	11/04/02 (MI)	Distillation	Wet scrubber with a control efficiency of 98%. VOC emissions < 0.46 lbs/hr	94.0% (03/19/03)
Grain Processing Corp.	IN-0075	06/10/97 (IN)	Distillation	Wet scrubber with a control efficiency of 95%.	Not Available.
Cargill, Inc.	NE-0016	04/25/96 (NE)	Distillation	Wet scrubber and a VOC emission limit of 2.22 lbs/hr.	Not Available.

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 and dehydration 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 (%)
Thermal Oxidizer	98
Catalytic Oxidizer	98
Flare	98
Wet Scrubber	94*
Refrigeration Condenser	90

*Although the permit for Michigan Ethanol required the wet scrubber to achieve a control efficiency of 98%, the testing results show that the scrubber at Michigan Ethanol can only achieve 94% when controlling the distillation process.

Step 4 – Evaluate the Most Effective Controls and Document Results

The most effective control technologies are thermal oxidizers, wet scrubbers, and flares at a control efficiency of 98%.

Step 5 – Select BACT

Iroquois Bio-Energy Company, LLC proposed to use recuperative thermal oxidizer C10 as BACT for the distillation and dehydration process. Based on the information obtained from the RBLC database, IDEM, OAQ agrees that a thermal oxidizer represents BACT for this type of operation. The recuperative thermal oxidizer selected by Iroquois Bio-Energy Company, LLC is also equipped with a heat recovery steam generator.

Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the distillation and dehydration process at this source:

(a) The VOC emissions from the distillation and dehydration process shall be controlled by recuperative thermal oxidizer/heat recovery steam generator C10.

(b) The destruction efficiency for recuperative thermal oxidizer/heat recovery steam generator C10 shall be at least 98%.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10) shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced. This VOC emission limit was proposed by the Permittee and is based on stack test results from a similar plant (Glacial Lake Energy Ethanol, Watertown, South Dakota; February 11-13, 2003).

Appendix B.3
Best Available Control Technology (BACT) Determination
For the Two (2) DDGS Dryers

Introduction:

The residue mash (whole stillage) leaving the distillation process will be transferred to the stillage processing area. The whole stillage then passes through a centrifuge process to remove the majority of water. The underflow from the centrifuege is called Wet Distillers Grains (WDGS). The WDGS can be loaded directly to customer trucks, or dried to produce Modified Wet distillers grains (MWDGS) with approximately 50% moisture and Dried Distillers Grains and Soluble (DDGS) with 10% moisture. According to the stack testing results from other similar plants, the potential VOC emissions from the DDGS dryers are greater than 25 tons/yr.

In the permit revision application received on March 11, 2005, Iroquois Bio-Energy Company, LLC proposed to install two (3) 42 MMBtu/hr DDGS dryers, instead of one 72 MMBtu/hr dryer as permitted in FESOP #073-20945-00037, issued on January 8, 2004. The potential VOC emissions from each of the new dryers are greater than 25 tons/yr and there are no other rules in 326 IAC 8 are applicable to these units, Therefore, the proposed two (2) DDGS dryers are subject to the requirements of 326 IAC 8-1-6 (BACT). The Permittee proposed to control the VOC emissions from the new dryers by a recuperative thermal oxidizer/heat recovery steam generator (C10) with a destruction efficiency of 98%, which is also used to control the emissions from the distillation and dehydration process.

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 detail 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 the 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 lbs/hr.	Under Construction.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available.
Michigan Ethanol	MI-0359	11/04/02 (MI)	Dryer	RTO with a control efficiency of 95%	99.6% (03/19/03)
Archer Daniels Midland Co.	IL-0087	12/27/02 (IL)	Feed Dryer	RTO with a control efficiency of 95% and VOC < 10 ppm.	Not Available.

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 this type of operation. 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 dryers due to the characteristics of the dryer exhaust gasses.

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, OAQ has concluded that catalytic oxidation is an unreliable control technology for the dryers because of the presence of particulates in the exhaust gasses.

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 dryers, natural gas must be added to the exhaust gasses prior to the flare.

Refrigeration Condensers: OAQ believes that condensers would be not technically feasible because the dryer exhaust characteristics of low VOC concentration and high volumetric flow rate would make condensers 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	98
Wet Scrubber	Less than 98

* The VOCs emitted from the DDGS dryers are less soluble than the VOCs emitted from the fermentation process. Therefore, the wet scrubber control efficiencies are not as high as the ones used to control VOC emissions from the fermentation processes.

Step 4 – Evaluate the Most Effective Controls and Document Results

According to the analysis above, the most effective control is thermal oxidation with a control efficiency of 98%.

Step 5 – Select BACT

Iroquois Bio-Energy Company LLC proposed to use a recuperative thermal oxidizer/heat recovery steam generator (C10) with a control efficiency of 98% to control the emissions from the DDGS dryers. The thermal oxidizer/heat recovery steam generator (C10) will also control the emissions from the distillation 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 DDGS dyres shall be controlled by recuperative thermal oxidizer/heat recovery steam generator C10.

(b) The destruction efficiency for recuperative thermal oxidizer/heat recovery steam generator C10 shall be at least 98%.

(c) The capture efficiency shall be 100% as defined in EPA Method 204.

(d) The VOC emissions from the recuperative thermal oxidizer/heat recovery steam generator (C10) shall not exceed 5.55 lbs/hr or 0.3 pounds per ton of DDGS produced. This VOC emission limit was proposed by the Permittee and is based on stack test results from a similar plant (Glacial Lake Energy Ethanol, Watertown, South Dakota; February 11-13, 2003).

Appendix B.4
Best Available Control Technology (BACT) Determination
For the Ethanol Loading Terminal

Introduction:

In F073-20945-00037, issued on January 8, 2004, the Permittee was permitted to construct and operate one (1) truck loading terminal to load out the denaturant ethanol. The potential VOC emissions from the truck loading terminal were estimated to be less than 25 tons/yr. Therefore, there were no BACT requirements for the truck loading terminal in F073-20945-00037, issued on January 8, 2004.

In the permit revision application received on March 11, 2005, the Permittee requested to install an additional railcar loading rack which uses only dedicated railcars. Iroquois Bio-Energy Company, LLC will ship denatured ethanol using either tank trucks or railcars. During the ethanol loading process, VOC 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 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 when loading to trucks (see the calculations in Appendix A). Since the ethanol truck loading terminal will be constructed after the January 1, 1980 applicability date and no other rules in 326 IAC 8 are applicable to these units, this facility is required to implement BACT when loading ethanol to trucks.

With a production limit of 50 million gallons of denatured ethanol per year, the potential VOC emissions from railcar loading are less than 25 tons/yr (see the emission calculations in Appendix A). Therefore, the ethanol loading terminal is not subject to the requirements of 326 IAC 8-1-6 (BACT) when loading to railcars.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the ethanol loading racks:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detail 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%	Under Construction.
Motiva Enterprises, L.L.C.	CT-0149	10/22/03 (CT)	Fuel Loading Rack	Vapor recovery unit with carbon absorption unit	Not Available.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Ethanol Loading Rack	Flare with a control efficiency of 94%.	Not Available.
Archer Daniels Midland Co.	IL-0090	03/28/03 (IL)	Ethanol Loading Rack	Flare with a control efficiency of 95%.	Not Available.
Van Waters & Rogers	CA-0894	09/01/99 (CA)	Truck Loading Stations	Thermal oxidizer with a control efficiency of 95%.	Not Available.

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 this type of operation. 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 loading 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; therefore, potentially affect the control efficiency of the scrubber. A significant amount of VOC emissions emitted during the loading of tank trucks 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 loading facility. IDEM, OAQ reviewed industry data to determine the VOC control efficiency of each of these remaining control technologies. The results of this review are summarized in the following table.

Control Technology	VOC Control Efficiency (%)
Flare	98
Thermal Oxidizer	98
Refrigeration Condenser	90

Step 4 – Evaluate the Most Effective Controls and Document Results

The two most effective control technologies are thermal oxidizers and flares which have highest control efficiencies.

Step 5 – Select BACT

Since flares achieve the highest control efficiency and have been used to control VOC emissions from other ethanol loading racks, Iroquois Bio-Energy Company LLC proposed to use a flare with a control efficiency of 98% to control the VOC emissions from the ethanol loading terminal when loading to the trucks. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the ethanol loading terminal at this source:

(a) The VOC emissions from the ethanol loading terminal shall be collected and controlled by open flare C50 when loading denatured ethanol to trucks.

(b) The overall control efficiency (including destruction efficiency and capture efficiency) for flare C50 shall be at least 98%.

(c) The VOC emissions from the flare C50 shall not exceed 0.69 lbs/hr. This limit was calculated based on the VOC emission factor of 0.96 lbs/kgal, the maximum truck loadout rate of 36 kgal/hr, and the flare control efficiency of 98% (0.96 lbs/kgal x 36 kgal/hr x (1-98%) = 0.69 lbs/hr). The VOC emission factor of 0.96 lbs/kgal was calculated using the equation in AP-42, Chapter 5.2.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document for a Significant Permit Revisions to Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Iroquois Bio-Energy Company, LLC
Initial Source Location:	751 West State Road 114, Rensselaer, Indiana 47978
County:	Jasper
SIC Code:	2869
Operation Permit No.:	073-16720-00037
Operation Permit Issuance Date:	January 8, 2004
Significant Permit Revision No.:	073-20945-00037
Permit Reviewer:	ERG/YC

On June 8, 2005, the Office of Air Quality (OAQ) had a notice published in the Rensselaer Republican, Rensselaer, Indiana, stating that Iroquois Bio-Energy Company, LLC had applied for a Significant Permit Revision to Federally Enforceable State Operating Permit (FESOP) to operate an ethanol production plant 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.

Upon further review, the OAQ 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. The detail requirements of NSPS, Subpart VV are included in the permit as Section E. The specific testing requirements of this subpart are listed under Condition E.1.9 and the specific monitoring requirements of this subpart are specified in Conditions E.1.1 through E.1.7. For clarification purposes, IDEM, OAQ has made the following revisions to Conditions D.6.4 and D.6.5:

D.6.4 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11][326 IAC 12][40 CFR 60 Subpart VV]

The Permittee shall conduct performance tests for equipment leaks in accordance with 40 CFR 60 Subpart VV **and Condition E.1.9**, as applicable

D.6.5 Parametric Monitoring [326 IAC 12][40 CFR 60 Subpart VV]

The Permittee shall develop and conduct a monitoring program for this facility addressing equipment leaks in accordance with 40 CFR 60 Subpart VV **and Conditions E.1.1 through E.1.7**, as applicable.

2. According to Condition C.17(d), unless otherwise specified in this permit, all reports required in Section D of this permit shall require the certification by the "authorized individual" as defined by 326

IAC 2-1.1-1(1). Therefore, Conditions D.1.13, D.3.17, and D.5.3 have been corrected as follows:

D.1.13 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.2(b) 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 "responsible official"~~ **"an authorized individual"** as defined by 326 IAC ~~2-7-1(34)~~ **2-1.1-1(1)**.

D.3.17 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.2(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 "responsible official"~~ **"an authorized individual"** as defined by 326 IAC ~~2-7-1(34)~~ **2-1.1-1(1)**.

D.5.3 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.5.1 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 "responsible official"~~ **"an authorized individual"** as defined by 326 IAC ~~2-7-1(34)~~ **2-1.1-1(1)**.

Appendix A: Emission Calculations
PM10 and PM10 Emissions
From Grain and DDGS Handling Operations

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

Process	Control Device ID	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)	PTE of PM/PM10 before Control** (tons/yr)
Grain Receiving and Storage	C20	Baghouse	0.004	39,000	1.34	5.86	> 100
Hammermills	C30	Baghouse	0.004	17,500	0.60	2.63	> 100
DDGS Cooling	C70	Baghouse	0.002	22,000	0.38	1.65	> 100
DDGS Loadout	C90	Baghouse	0.005	3,750	0.16	0.70	> 100
Total						**10.8**	**> 250**

*Assume all PM emissions equal PM10 emissions.

** The baghouses have control efficiencies greater than 99%. Therefore, the PTE of PM/PM10 before control for each operation is greater than 100 tons/yr.

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

Appendix A: Emission Calculations
VOC and HAP Emissions
From the DDGS Cooling System (P70)

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

1. Process Description:

Max. Throughput Rate:	20	tons/hr
Annual Production Limit:	162,218	tons/yr of DDGS

2. Potential to Emit (PTE):

	Emission Factor* (lbs/ton)	PTE (lbs/hr)	PTE (tons/yr)	Limited PTE (tons/yr)
VOC	0.1	2.00	8.76	8.11
HAP				
Acetaldehyde	0.003	0.06	0.26	0.24
Acrolein	0.0013	0.03	0.11	0.11
Formaldehyde	0.0007	0.01	0.06	0.06
Methanol	0.0007	0.01	0.06	0.06
Total	**0.01**		**0.50**	**0.46**

* Emission Factors were provided by the source based on the test results at a similar source (Glacial Lakes).
Note: The PM/PM10 emissions from this cooling system can be found in page 1 of this appendix.

Methodology

PTE (lbs/hr) = Max. Throughput Rate (tons/hr) x Emission Factor (lbs/ton)
PTE (tons/yr) = Max. Throughput Rate (tons/hr) x Emission Factor (lbs/ton) x 8760 hr/yr x 1 ton/2000 lbs
Limited PTE (tons/yr) = Annual Production Limit (tons/yr) x Emission Factor (lbs/ton) x 1 ton/2000 lbs

Appendix A: Emission Calculations
PM, PM10, VOC, and HAP Emissions
From the Fermentation Process (P40)

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

1. Process Description:

Max. Production Rate:	6,500	gal/hr
Control Equipement:		Wet Scrubber
Annual Production Limit:	50	MMgal/yr

2. Potential to Emit (PTE):

	Emission Rate after Control* (lbs/MMgal)	PTE after Control (lbs/hr)	Unlimited PTE after Control (tons/yr)	Limited PTE after Control (tons/yr)	Control Efficiency** (%)	PTE before Control (tons/yr)
VOC	1,800	11.7	51.2	45.0	98%	2,562
HAP						
Acetaldehyde	245	1.59	6.98	6.13	50%	14.0
Acrolein	5.88	0.04	0.17	0.15	0%	0.17
Formaldehyde	0.22	1.43E-03	0.01	0.01	0%	0.01
Methanol	19.9	0.13	0.57	0.50	0%	0.57
Total	**271**	**1.76**	**7.71**	**6.77**		**14.7**

* These emission factors were provided by the source based on the test results for other similar sources ((Russell Plant and Badger State) plus a moderate margin of safety. The Permittee is required to perform stack testing to verify the VOC and total HAP emission factors.

** The control efficiency for VOC is provided by the source. The control efficiencies for HAPs are based on the testing results for other similar plants.

Methodology

PTE after Control (lbs/hr) = Emission Rate after Control (lbs/MMgal) x Max. Production Rate (gal/hr) x 1 MMgal/1,000,000 gal
Unlimited PTE of after Control (tons/yr) = PTE of after Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs
Limited PTE of after Control (tons/yr) = Annual Production limit (MMgal/yr) x Emission Rate after Control (lbs/MMgal) x 1 ton/2000 lbs
PTE of before Control (tons/yr) = Unlimited PTE after Control (tons/yr) / (1-Control Efficiency)

Appendix A: Emission Calculations
Emissions
From the Recuperative Thermal Oxidizer/Heat Recovery Steam Generator C10

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

The recuperative thermal oxidizer/heat recovery stem generator will be used to control the emissions from the mashing, cooking and liquefication operation, the distillation and dehydration operation, and the DDGS dryers.

Heat Input Capacity MMBtu/hr		Max. Throughput Rate (tons/hr)		Annual DDGS Production Limit (tons/yr)
209	(3 combustion units total)	20.0	(for the dryers)	162,218

	Pollutant					
	PM*	PM10*	SO_2*	NOx**	VOC*	CO*
Emission Factor	0.20 (lbs/ton)	0.20 (lbs/ton)	0.46 (lbs/ton)	100 (lbs/MMCF)	0.30 (lbs/ton)	1.20 (lbs/ton)
PTE after Control (lbs/hr)	**4.00**	**4.00**	**9.20**	**20.9**	**6.00**	**24.0**
Control Efficiency* **	**90%**	**90%**	**NA**	**NA**	**98%**	**83%**
PTE before Control (tons/yr)	**175**	**175**	**40.3**	**91.5**	**1,314**	**618**
Limited PTE after Control (tons/yr)	**16.2**	**16.2**	**37.3**	**91.5**	**24.3**	**97.3**

* Emission factors for PM/PM10, SO_2, VOC, and CO were provided by the source based on dryer emission test results from a similar source (Glacial Lake Energy Ethanol, Watertown, South Dakota; February 11-13, 2003).
The emissions from NG combustion, mashing, cooking, and liquefication operation, the distillation and dehydration process, and the dryers are included in these factors.
**Emission factor for NOx from AP-42, Chapter 1.4, Tables 1.4-1 (AP-42 Supplement D 3/98) for controlled boiler with flue gas recirculation.
*** Control efficiencies were provided by the source.

Methodology

PTE of PM/PM10, SO_2, VOC, and CO after Control (lbs/hr) = Max. Throughput Rate (tons/hr) x Emission Factor (lbs/ton)
PTE of NOx after Control (tons/yr) = Heat Input Capacity (MMBtu/hr) x 1 MMCF/1,000 MMBtu x Emission Factor (lbs/MMCF)
PTE before Control (tons/yr) = PTE after Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs / (1-Control Efficiency)
Limited PTE of PM/PM10, SO_2, VOC, and CO (tons/yr) = Annual DDGS Production Limit (tons/yr) x Emission Factor (lbs/ton) x 1 ton/2000 lbs
Limited PTE of NOx (tons/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu x Emission Factor (lbs/MMCF) x 1 ton/2000 lbs

Appendix A: Emission Calculations
HAP Emissions
From the Recuperative Thermal Oxidizer/Heat Recovery Steam Generator (C10)

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

Max. Throughput Rate (tons/hr)		RTO Control Efficiency	Annual DDGS Production Limit (tons/yr)
20.0	(for the dryers)	98%	162,218

	Pollutant				
Emission Factor in lbs/ton*	Formaldehyde 0.31	Acetaldehyde 0.56	Acrolein 0.066	Methanol 0.11	**Total**
PTE Before Control (tons/yr)	**27.2**	**49.1**	**5.78**	**9.64**	**91.6**
Limited PTE After Control (tons/yr)	**0.50**	**0.91**	**0.11**	**0.18**	**1.70**

* Emission factors for the stack test results for other similar sources before control.

Methodology

PTE of HAPs before Control (tons/yr) = Max. Throughput Rate (tons/hr) x Emission Factor (lbs/ton) x 8760 hr/yr x 1 ton/2000 lbs
Limited PTE of HAPs after Control (tons/yr) = Annual DDGS Production Limit (tons/yr) x Emission Factor (lbs/ton) x (1-Control Efficiency)

Appendix A: Emission Calculations
VOC and HAP Emissions from Ethanol Loading Terminal

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

1. Emission Factors: AP-42

Ethanol will be shipped by truck and by rail. Railcars will be dedicated fleets, but the trucks may be used to carry gasoline prior to filling with ethanol. Railcars and trucks will be filled by submerged loading process and the truck loading process is 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 rack can be estimated from the following equation:

$$L = 12.46 \times (SPM)/T$$

where:

L = loading loss (lbs/kgal)
S = a saturation factor (see AP-42, Table 5.2-1)
P = true vapor pressure of the liquid loaded (psia)
M = molecular weight of vapors
T = temperature of the bulk liquid loaded (degree R)

Previous Stored Liquid	S	P (psia)	M (lbs/mole lbs)	T (degree R)	L (lbs/kgal)
Gasoline (normal)	0.6	3.99	66	505	3.90
Gasoline (clean cargo)	0.5	3.99	66	505	3.25
Denatured Ethanol (normal)	0.6	0.50	49.7	505	0.37
Denatured Ethanol (clean cargo)	0.5	0.50	49.7	505	0.31

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) = 0.96 (lbs/kgal)

2. Unlimited Potential to Emit VOC Before Control:

The worst case scenario is assuming that all the trucks are used to ship gasoline before filling with denatured ethanol and all the denatured ethanol is shipped by trucks.

Max. Loading Rate for Trucks = 36.0 kgal/hr

PTE of VOC before Control (tons/yr) = 36.0 kgal/hr x 0.96 lbs/kgal x 8760 hr/yr x 1 ton/2000 lbs = **151 tons/yr**

3. Limited Potential to Emit VOC after Control:

Annual Production Limit: 50,000 kgal/yr
Annual Truck Loadout Limit: 2,500 kgal/yr
Flare Control Efficiency: 98% (for truck loading only)

Limited PTE of VOC by Trucks (tons/yr) = 0.96 lbs/kgal x 2,500 kgal/yr x (1-98%) x 1 tons/2000 lbs = **0.10 tons/yr**
Limited PTE of VOC by Railcars (tons/yr) = 0.37 lbs/kgal x 50,000 kgal/yr x 1 tons/2000 lbs = **9.20 tons/yr**

4. Potential to Emit HAPs:

HAP emissions are mainly from the unloading process for trucks, which may used to ship gasoline before.

HAP	HAP Fraction*	PTE of HAP before Control (tons/yr)	Limited PTE of HAP (tons/yr)
Benzene	2.50E-03	0.38	2.44E-04
Carbon Disulfide	2.00E-05	0.00	1.95E-06
Cumene	1.00E-04	0.02	9.75E-06
Ethyl benzene	5.00E-05	0.01	4.87E-06
n-Hexane	5.00E-02	7.54	4.87E-03
Toluene	5.00E-03	0.75	4.87E-04
Xylene	5.00E-04	0.08	4.87E-05
Total	**0.06**	**8.77**	**0.01**

* 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 (Tons/yr) = Limited PTE of VOC by Railcars - Worst Case Senario (tons/yr) x HAP %

Appendix A: Emission Calculations
Combustion Emissions
From the Ethanol Loadout Flare C50

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

Heat Input Capacity MMBtu/hr	Max. Loadout Rate for Trucks kgal/hr	Annual Truck Loadout Limit kgal/yr
6.40	36.0	2,500

	Pollutant					
	*PM	*PM10	*SO_2	**NO_x	***VOC	**CO
Emission Factor	7.6 (lbs/MMCF)	7.6 (lbs/MMCF)	0.6 (lbs/MMCF)	0.077 (lbs/kgal)	-	0.129 (lbs/kgal)
Unlimited Potential to Emit in tons/yr	**0.21**	**0.21**	**0.02**	**12.1**	**NA**	**20.3**
Limited Potential to Emit in tons/yr	**1.69E-03**	**1.69E-03**	**1.33E-04**	**0.10**	**NA**	**0.16**

*PM, PM10, and SO_2 emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3 (AP-42, 03/98).
PM and PM10 emission factors are condensable and filterable PM10 combined.
**Emission factors for NO_x and CO are provided by the source based on the test results for similar sources.
*** VOC emissions can be found in page 6 of this appendix.
Note: Flare C50 is only used to control the emissions from the truck loading process.

Methodology

PTE of PM/PM10 and SO_2 (tons/yr) = Max. Heat Input (MMBtu/hr) x 1 MMCF/1,000 MMBtu x Emission Factor (lbs/MMCF) x 8760 hr/yr x 1 ton/2000 lbs
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
Limited PTE of PM/PM10 and SO_2 (tons/yr) = Unlimited PTE (tons/yr) x Annual Truck Loadout Limit (kgal/yr) / (Max. Load-out Rate kgal/hr x 8760 hr/yr)

Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E =	emission factor (lb/vehicle mile traveled)	
sL =	road surface silt loading (g/m^2) =	0.6 (g/m^2) (AP-42, Table 13.2.1-3)
w =	mean vehicle weight (tons) =	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 = $(0.082 \times (0.6/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.95** lbs/mile

PM10 Emission Factor = $(0.016 \times (0.6/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.19** lbs/mile

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	Ave Weight of Vehicles* (tons)	Trip Number* (trips/day)	Round Trip Distance* (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)
Grain Receiving	27.5	100	0.50	18,250	60.6%	16.7	8.7	1.70
DDGS	27.5	33	0.50	6,023	20.0%	5.50	2.87	0.56
Ethanol Load Out	27.5	30	0.50	5,475	18.2%	5.00	2.61	0.51
Denaturant Delivery	27.5	2	0.50	365	1.21%	0.33	0.17	0.03
Total				**30,113**	**100%**	**27.5**	**14.4**	**2.80**

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/hr) x Round-Trip Distance (mile/trip) x 8760 hrs/yr
Traffic Component (%) = VMT / Total VMT
Component Vehicle Weight = Ave. Weight of Vehicles (ton) x Traffic Component (%)
PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source proposed to use periodic sweeping to control the fugitive dust emissions.
The control efficiency from sweeping is assumed to be 50%.

PTE of PM after Control = 14.4 tons/yr x (1-50%) = **7.19 tons/yr**

PTE of PM10 after Control = 2.80 tons/yr x (1-50%) = **1.40 tons/yr**

Appendix A: Emission Calculations
PM/PM10 Emissions
From the One (1) Cooling Tower (Insignificant)

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

1. Process Description:

Control Devices:	Drift Eliminator	
Flow Rate:	1,200,000	gallons/hour
Total Dissolved Solids (TDS):	2,500	ppmv
Drift Losses (% of cooling water):	0.005%	(provided by the source)

2. Potential to Emit PM/PM10 of the Cooling Tower:

Assume all the PM emissions are equal to PM10 emissions.

Hourly PM/PM10 Emissions = 1,200,000 gal/hr x 8.34 lbs/gal x 2,500 ppmv /1,000,000 x 0.005% = **1.25 lbs/hr**

Annual PM/PM10 emissions = 1.25 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs = **5.48 tons/yr**

Appendix A: Emission Calculations
Internal Combustion Engines

From the Diesel Fired Emergency Water Pump EP-16 (Insignificant)

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

Power Output Horse Power (HP)	Operation Limit hr/yr
190	500

		Pollutant					
		PM*	PM10*	SO_2	NO_x	**VOC	CO
Emission Factor in lb/HP-hr	(<600 hp)	2.20E-03	2.20E-03	2.05E-03	3.10E-02	2.47E-03	6.68E-03
Potential to Emit in tons/yr		**0.10**	**0.10**	**0.10**	**1.47**	**0.12**	**0.32**

*Assume PM10 emissions are equal to PM emissions.
** Assume TOC (total organic compounds) emissions are equal to VOC emissions.
Emission factors are from AP-42, Chapter 3.3, Table 3.3-1, SCC #2-02-001-02 and 2-03-001-01 (AP-42 Supplement B, 10/96).

Note: As defined in the September 6, 1995 memorandum from John S. Seitz of US EPA on the subject of "Calculating Potential to Emit for Emergency Generators", an emergency generator's sole function is to provide back-up power when power from the local utility is interrupted. The only circumstances under which an emergency generator would operate when utility power is available are during operator training or brief maintenance checks. The generator's potential to emit is based on an operating time of 500 hours per year as set forth in the EPA memo.

Methodology

PTE (tons/yr) = Power Output (HP) x Emission Factor (lb/HP-hr) x Operation Limit (hr/yr) x 1 ton/2000 lbs

Appendix A: Emission Calculations
Combustion Emissions
From Biomethanator Flare EP-15 (Insignificant)

Company Name: Iroquois Bio-Energy Company, LLC
Address: 751 W. State Road 114, Rensselaer, IN 47978
SPR: 073-20945-00037
Reviewer: ERG/YC
Date: June 1, 2005

Max. Heat Input MMBtu/hr	Operating Hour Limit (hours/yr)	
3.2	500	(This unit only operates when the dryers are down)

	Pollutant						
	PM[b]	PM10[b]	SO_2[b]	NOx[a]	CO[a]	VOC[a]	HAP[b]
Emission Factor in lb/MMBtu	-	-	-	0.068	0.37	0.052	-
Potential to Emit in tons/yr	Negligible	Negligible	Negligible	**0.05**	**0.30**	**0.04**	Negligible

[a] Emission factors are from AP-42, Tables 13.5-1 and 13.5-2 (AP-42, 01/95).

[b] The Permitttee stated that PM/PM10 emissions from this flare is negligibe due to the smokeless design. The PTE of SO_2 and HAP are negligible due to negligible sulfur and HAP presence in the gas stream.

Methodology

PTE (tons/yr) = Max. Heat Input (MMBtu/hr) x Emission Factor (lbs/MMBtu) x Operating Hour Limit (hour/yr) x 1 ton/2000 lbs