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Commissioner

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TO: Interested Parties / Applicant  
DATE: June 29, 2007  
RE: Renewable Agricultural / 165-24286-00082  
FROM: Nisha Sizemore  
Chief, Permits Branch  
Office of Air Quality

### **Notice of Decision: Approval - Effective Immediately**

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

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

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

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

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

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

Enclosures  
FNPER.dot 03/23/06



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

Renewable Agricultural Energy, Inc.
State Road 63 between County Road 310 North and County Road 200 North
Cayuga, Indiana 47928

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 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.

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.

Table with permit details: Operation Permit No.: F165-24286-00082, Issued by: Nisha Sizemore, Chief, Permits Branch, Office of Air Quality, Issuance Date: June 29, 2007, Expiration Date: June 29, 2012

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**Effective Date of the Permit**

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**Effective Date of the Permit**

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## SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.4 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

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

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The Permittee owns and operates a stationary ethanol production plant.

Source Address:	State Road 63 between County Road 310 North and County Road 200 North, Cayuga, Indiana 47928
Mailing Address:	1900 Ninth Street Suite 200, Boulder, CO 80302
General Source Phone Number:	(303) 449-5941
SIC Code:	2869
County Location:	Vermillion
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset 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)]

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

- (a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouses CE01 and CE02, exhausting through stacks SV01 and SV02, and consisting of the following:
  - (1) Three (3) grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2) and EU03 (Grain Rail Dump Pit/Auger #1), approved for construction in 2007, each with a maximum throughput rate of 980 tons of grain per hour, controlled by CE01, and exhausting through SV01.
  - (2) Grain receiving and handling equipment, identified as EU04 (Associated Conveyors), approved for construction in 2007, with a maximum throughput rate of 4,200 tons of grain per hour, controlled by CE01, and exhausting through SV01.
  - (3) Grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), approved for construction in 2007, each with a maximum throughput rate of 4,200 tons of grain per hour, controlled by CE02, and exhausting through SV02.
- (b) Three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68, approved for construction in 2007, with a capacity of 4,200 tons of grain per hour for each transfer conveyor and 770,000 bushels of corn per silo; controlled by Bin Vent Filters CE03, CE04, and CE19, respectively, and exhausting through stacks SV03, SV04, and SV20, respectively.
- (c) One (1) corn scalper, and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, approved for construction in 2007 with the corn scalper having a maximum throughput rate of 840 tons/hr and each hammermill with a maximum throughput rate of 42 tons per hour. The corn scalper and one (1) hammermill is controlled by CE05 which exhausts through SV05 and the three (3) other hammermills are individually controlled by

CE06, CE07 and CE08, which exhaust through SV06, SV07 and SV08, respectively.

- (d) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons per year (as ethanol), controlled by scrubber CE10, with emissions exhausted through stack SV09. This process consists of the following:

- (1) Two (2) yeast tanks, identified as EU40 and EU41, approved for construction in 2007.
- (2) Seven (7) fermenters, identified as EU42 through EU48, approved for construction in 2007.
- (3) One (1) beer well, identified as EU49, approved for construction in 2007.

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

- (e) Two (2) natural gas-fired boilers, identified as EU63, and EU64, approved for construction in 2007, each with a maximum heat input rate of 185 MMBtu/hr, with emissions exhausting to stacks SV16, and SV17, respectively.

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

- (f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons of ethanol per year, controlled by a scrubber (CE09) and two thermal oxidizers (CE15 and CE17), with emissions exhausted through stacks SV13 and SV14. This process consists of the following:

- (1) One (1) slurry tank, identified as EU17, approved for construction in 2007.
- (2) One (1) liquefaction tank, identified as EU18, approved for construction in 2007.
- (3) Two (2) beer columns, identified as EU19 and EU20, approved for construction in 2007.
- (4) Two (2) strippers, identified as EU21 and EU22, approved for construction in 2007.
- (5) Two (2) rectifiers, identified as EU23, and EU24, approved for construction in 2007.
- (6) One (1) multiple-effect evaporator, identified as EU25, approved for construction in 2007.
- (7) One (1) process condensate tank, identified as EU26, approved for construction in 2007.
- (8) One (1) whole stillage tank, identified as EU27, approved for construction in 2007.
- (9) One (1) thin stillage tank, identified as EU28, approved for construction in 2007.
- (10) One (1) syrup tank, identified as EU29, approved for construction in 2007.
- (11) Four (4) centrifuges, identified as EU30, EU31, EU32 and EU33, approved for construction in 2007.

- (12) Four (4) molecular sieves, identified as EU34, EU35, EU36 and EU37, approved for construction in 2007.
- (13) Two (2) 200-proof condensers, identified as EU38 and EU39, approved for construction in 2007.

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

- (g) Two (2) DDGS dryer and cooling systems, with a maximum throughput rate of 372,201 tons of DDGS per year, consisting of the following:
  - (1) One (1) natural gas fired DDGS dryer, identified as EU55, with a maximum heat input rate of 90 MMBtu/hr and one (1) DDGS cooler, identified as EU56, with emissions controlled by one (1) thermal oxidizer (CE15) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV13.
  - (2) One (1) natural gas fired DDGS dryer, identified as EU58, with a maximum heat input rate of 90 MMBtu/hr and one (1) DDGS cooler, identified as EU59, with emissions controlled by one (1) thermal oxidizer (CE17) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV14.
- (h) One (1) DDGS handling and storage operation, approved for construction in 2007, consisting of the following:
  - (1) Three (3) DDGS silos, identified as EU50, EU51 and EU52, approved for construction in 2007, with a capacity of 3,650 tons of DDGS each, controlled by baghouse CE11, with emissions exhausted to stack SV10.
  - (2) Two (2) DDGS truck loadout spouts, identified as EU53 and EU69, approved for construction in 2007, each with a maximum throughput rate of 55 tons/hr of DDGS, controlled individually by baghouses CE12 and CE20 with emissions exhausted to stacks SV11 and SV21, respectively.
  - (3) One (1) DDGS rail loadout spout, identified as EU54, approved for construction in 2007, with a maximum throughput rate of 100 tons/hr of DDGS, controlled by baghouse CE13 with emissions exhausted to stack SV12.
- (i) One (1) ethanol loading rack for trucks, identified as EU61, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare, identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

- (j) One (1) ethanol loading rack for railcars, identified as EU62, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare, identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

- (k) One (1) emergency generator, identified as EU65, approved for construction in 2007, with

a maximum power output rate of 3,740 horsepower, and exhausting to stack SV18.

Under NSPS, Subpart IIII, the emergency generator, EU65, is considered to be an affected facility.

- (I) One (1) emergency fire pump, identified as EU66, approved for construction in 2007, with a maximum power output rate of 290 horsepower, and exhausting to stacks SV19.

Under NSPS, Subpart IIII, the emergency fire pump, EU66, is considered to be an affected facility.

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

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

- (a) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (b) Forced and induced draft cooling tower system not regulated under a NESHAP.
- (c) Replacement or repair of bags in baghouses and filters in other air filtration equipment.
- (d) Paved roads and parking lots with limited public access. [326 IAC 6-4]
- (e) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (f) Other emission units, not regulated by a NESHAP, with PM<sub>10</sub>, NO<sub>x</sub>, and SO<sub>2</sub> 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) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
  - (2) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
  - (3) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
  - (4) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 264,383 gallons of natural gasoline. [326 IAC 8-4-3]
  - (5) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.
  - (6) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 are considered to be new volatile organic liquid storage tanks.

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

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

## SECTION B GENERAL CONDITIONS

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

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

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

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

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

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

- (a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as proposed in the application or the permit. The emission units covered in this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.
- (c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

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

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- (a) This permit, F165-24286-00082, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

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

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

### B.7 Severability [326 IAC 2-8-4(4)]

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

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

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

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

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- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

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

---

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

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

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

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
  - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether compliance was continuous or intermittent;

- (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
- (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

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

**B.12 Compliance Order Issuance [326 IAC 2-8-5(b)]**

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

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

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

- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
- (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
- (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

**B.14 Emergency Provisions [326 IAC 2-8-12]**

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- (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 describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

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

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

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

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

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

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

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
  - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
  - (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or

contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
  - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
  - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
    - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
    - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

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

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

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

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- (a) All terms and conditions of permits established prior to F165-24286-00082 and issued pursuant to permitting programs approved into the state implementation plan have been either:
  - (1) incorporated as originally stated,
  - (2) revised, or
  - (3) deleted
- (b) All previous registrations and permits are superseded by this permit.

**B.16 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]**

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

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

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

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

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

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

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

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- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:
- (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]
- (c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

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

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

Request for renewal shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
- (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
  - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.20 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:
- Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251
- Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

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

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:
- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
  - (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
  - (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
  - (4) The Permittee notifies the:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

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

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

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

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

- (b) Emission Trades [326 IAC 2-8-15(c)]  
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(d)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

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

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

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

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

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.24 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:  
  
Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
  
The application which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

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

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

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

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

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

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

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

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

#### C.3 Opacity [326 IAC 5-1]

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

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

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

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

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

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

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

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

C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

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Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on 3/5/2007. The plan is included as Attachment A.

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

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

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

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- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
  - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
  - (2) If there is a change in the following:
    - (A) Asbestos removal or demolition start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-52 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

- (e) **Procedures for Asbestos Emission Control**  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**  
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

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

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

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- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted

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

### **Compliance Requirements [326 IAC 2-1.1-11]**

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

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

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

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

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

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

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

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

#### **C.13 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]**

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- (a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous emission monitoring systems (CEMS) and related equipment.
- (b) In the event that a breakdown of a continuous emission monitoring system occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.
- (c) Whenever a continuous emission monitor other than an opacity monitor is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, a calibrated backup CEMS shall be brought online within four (4) hours of shutdown of the primary CEMS, and shall be operated until such time as the primary CEMS is back in operation.
- (d) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to

C.14 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

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

C.15 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

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

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

C.16 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

C.17 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

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- (a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
  - (1) initial inspection and evaluation;
  - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
  - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
  - (1) monitoring results;
  - (2) review of operation and maintenance procedures and records; and/or
  - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall maintain the following records:

- (1) monitoring data;
- (2) monitor performance data, if applicable; and
- (3) corrective actions taken.

**C.18 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]**

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

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

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

**C.19 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]**

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

**C.20 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]**

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

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or

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

- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

### **Stratospheric Ozone Protection**

#### **C.21 Compliance with 40 CFR 82 and 326 IAC 22-1**

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

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1 FACILITY OPERATION CONDITIONS – Grain Handling

### Emissions Unit Description:

- (a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouses CE01 and CE02, exhausting through stacks SV01 and SV02, and consisting of the following:
- (1) Three (3) grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2) and EU03 (Grain Rail Dump Pit/Auger #1), approved for construction in 2007, each with a maximum throughput rate of 980 tons of grain per hour, controlled by CE01, and exhausting through SV01.
  - (2) Grain receiving and handling equipment, identified as EU04 (Associated Conveyors), approved for construction in 2007, with a maximum throughput rate of 4,200 tons of grain per hour, controlled by CE01, and exhausting through SV01.
  - (3) Grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), approved for construction in 2007, each with a maximum throughput rate of 4,200 tons of grain per hour, controlled by CE02, and exhausting through SV02.
- (b) Three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68, approved for construction in 2007, with a capacity of 4,200 tons of grain per hour for each transfer conveyor and 770,000 bushels of corn per silo; controlled by Bin Vent Filters CE03, CE04, and CE19, respectively, and exhausting through stacks SV03, SV04, and SV20, respectively.
- (c) One (1) corn scalper, and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, approved for construction in 2007 with the corn scalper having a maximum throughput rate of 840 tons/hr and each hammermill with a maximum throughput rate of 42 tons per hour. The corn scalper and one (1) hammermill is controlled by CE05 which exhausts through SV05 and the three (3) other hammermills are individually controlled by CE06, CE07 and CE08, which exhaust through SV06, SV07 and SV08, respectively.
- (h) One (1) DDGS handling and storage operation, approved for construction in 2007, consisting of the following:
- (1) Three (3) DDGS silos, identified as EU50, EU51 and EU52, approved for construction in 2007, with a capacity of 3,650 tons of DDGS each, controlled by baghouse CE11, with emissions exhausted to stack SV10.
  - (2) Two (2) DDGS truck loadout spouts, identified as EU53 and EU69, approved for construction in 2007, each with a maximum throughput rate of 55 tons/hr of DDGS, controlled individually by baghouses CE12 and CE20 with emissions exhausted to stacks SV11 and SV21, respectively.
  - (3) One (1) DDGS rail loadout spout, identified as EU54, approved for construction in 2007, with a maximum throughput rate of 100 tons/hr of DDGS, controlled by baghouse CE13 with emissions exhausted to stack SV12.

### Insignificant Activity:

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

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

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

**Construction Conditions**

**General Construction Conditions**

D.1.1 Permit No Defense

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

**Effective Date of the Permit**

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

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

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

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

**Operation Conditions**

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

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

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the grain receiving and DDGS handling operations:

- (a) The PM and PM10 emissions from the following units shall not exceed the emission limits listed in the table below.

Unit ID	Unit Description	Control Device ID	PM/PM10 Emission Limit (lbs/hr)
EU01, EU02, EU03, EU04	Grain Receiving Pit	CE01	0.77
EU05, EU06, EU07	Grain Handling	CE02	0.77
EU08, EU09	Corn Storage Silo #1	CE03	0.09
EU10, EU11	Corn Storage Silo #2	CE04	0.09
EU67, EU68	Corn Storage Silo #3	CE19	0.09
EU12, EU13	Corn Scalper, Hammermill Baghouse #1	CE05	0.15
EU14	Hammermill Baghouse #2	CE06	0.15
EU15	Hammermill Baghouse #3	CE07	0.15
EU16	Hammermill Baghouse #4	CE08	0.15
EU50, EU51, EU52	DDGS Silos	CE11	0.05
EU53	DDGS Truck Loadout #1	CE12	0.05
EU69	DDGS Truck Loadout #2	CE20	0.05
EU54	DDGS Rail Loadout	CE13	0.05

- (b) The total grain received by straight trucks shall not exceed 25,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The total grain received by hopper trucks shall not exceed 1,166,045 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

- (d) The total DDGS loadout shall not exceed 372,212 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (e) The Permittee shall use periodic sweeping to control PM emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

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

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

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

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU01, EU02, EU03	Grain Receiving Pit	980	77.3
EU04	Associated Conveyors	4,200	97.7
EU05, EU06, EU07	Grain Handling	4,200	97.7
EU08, EU09	Corn Storage Silo #1	4,200	97.7
EU10, EU11	Corn Storage Silo #2	4,200	97.7
EU67, EU68	Corn Storage Silo #3	4,200	97.7
EU12	Corn Scalper	840	75.4
EU13	Hammermill Baghouse #1	42	43.0
EU14	Hammermill Baghouse #2	42	43.0
EU15	Hammermill Baghouse #3	42	43.0
EU16	Hammermill Baghouse #4	42	43.0
EU53	DDGS Truck Loadout #1	55	45.5
EU69	DDGS Truck Loadout #2	55	45.5
EU54	DDGS Rail Loadout	100	51.3

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:

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

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

**D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

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

**Compliance Determination Requirements**

**D.1.7 Particulate Control**

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

Unit ID	Unit Description	Control Device ID
EU01, EU02, EU03, EU04	Grain Receiving Pit	CE01
EU05, EU06, EU07	Grain Handling	CE02
EU08, EU09	Corn Storage Silo #1	CE03
EU10, EU11	Corn Storage Silo #2	CE04
EU67, EU68	Corn Storage Silo #3	CE19
EU12, EU13	Corn Scalper, Hammermill Baghouse #1	CE05
EU14	Hammermill Baghouse #2	CE06
EU15	Hammermill Baghouse #3	CE07
EU16	Hammermill Baghouse #4	CE08
EU50, EU51, EU52	DDGS Silos	CE11
EU53	DDGS Truck Loadout #1	CE12
EU69	DDGS Truck Loadout #2	CE20
EU54	DDGS Rail Loadout	CE13

- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

In order to demonstrate compliance with Conditions D.1.4(a) and D.1.5, the Permittee shall perform PM and PM10 testing for baghouses CE01, CE02, CE03, CE04, CE19, CE05, CE06, CE07, CE08, CE11, CE12, CE20, and CE13 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 includes filterable and condensable PM10.

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

**D.1.9 Visible Emissions Notations**

- (a) Visible emission notations of the baghouse stack exhausts (stacks SV01, SV02, SV03, SV04, SV05, SV20, SV06, SV07, SV08, SV10, SV11, SV21, and SV12) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee or contractor is a person who has worked or trained at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

#### D.1.10 Parametric Monitoring

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- (a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the three (3) grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2), and EU03 (Grain Rail Dump Pit/Auger #1), the grain receiving and handling equipment, identified as EU04 (Associated Conveyors), the grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), the one (1) corn scalper and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, the three (3) DDGS silos, identified as EU50, EU51 and EU52, the two (2) DDGS truck loadout spouts, identified as EU53 and EU69, and the one (1) DDGS rail loadout spout, identified as EU54 and the bin vent filters used in conjunction with the the three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68 at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.
- (b) The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated at least once every six (6) months.

#### D.1.11 Broken or Failed Bag Detection

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

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

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

#### D.1.12 Record Keeping Requirements

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- (a) To document compliance with Condition D.1.4(b), the Permittee shall maintain monthly records of the amount of grain received by straight truck at this plant.
- (b) To document compliance with Condition D.1.4(c), the Permittee shall maintain monthly records of the amount of grain received by hopper truck at this plant.
- (c) To document compliance with Condition D.1.4(d), the Permittee shall maintain monthly records of the amount of DDGS produced.
- (d) To document compliance with Condition D.1.4(e), the Permittee shall maintain records of the dates and times that sweeping is performed on the paved roads.
- (e) To document compliance with Condition D.1.9, the Permittee shall maintain records of

daily visible emission notations of the baghouse stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

- (f) To document compliance with Condition D.1.10, the Permittee shall maintain daily records of pressure drop for baghouses during normal operation. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).
- (g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### D.1.13 Reporting Requirements

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

## SECTION D.2 FACILITY OPERATION CONDITIONS – Fermentation

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

- (d) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons per year (as ethanol), controlled by scrubber CE10, with emissions exhausted through stack SV09. This process consists of the following:
- (1) Two (2) yeast tanks, identified as EU40 and EU41, approved for construction in 2007.
  - (2) Seven (7) fermenters, identified as EU42 through EU48, approved for construction in 2007.
  - (3) One (1) beer well, identified as EU49, approved for construction in 2007.

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

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

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

### ***Construction Conditions***

#### **General Construction Conditions**

##### D.2.1 Permit No Defense

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

#### **Effective Date of the Permit**

##### D.2.2 Effective Date of the Permit [IC13-15-5-3]

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

##### D.2.3 Modification to Construction Conditions [326 IAC 2]

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

### ***Operation Conditions***

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

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

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Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the scrubber CE10, which is used to control the emissions from the fermentation processes:

- (a) VOC emissions shall not exceed 8.56 lbs/hr.
- (b) Acetaldehyde emissions shall not exceed 1.14 lbs/hr.

- (c) Total HAP emissions shall not exceed 1.21 lbs/hr.

Combined with the PM/PM10, VOC, SO<sub>2</sub>, CO, and NO<sub>x</sub> emissions from other units, the PM/PM10, SO<sub>2</sub>, VOC, CO, NO<sub>x</sub> emissions from the entire source are each limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

#### D.2.5 VOC Emissions [326 IAC 8-5-6]

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Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

- (a) The VOC emissions from the fermentation process shall be controlled by scrubber CE10.
- (b) The overall VOC efficiency for the scrubber CE10 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

#### D.2.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

### Compliance Determination Requirements

#### D.2.7 VOC and HAP Control

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In order to comply with Conditions D.2.4 and D.2.5, scrubber CE10 shall be in operation and control emissions from the fermentation processes at all times that these units are in operation.

#### D.2.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6(d)]

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In order to demonstrate compliance with Conditions D.2.4 and D.2.5, the Permittee shall perform VOC and Acetaldehyde testing for the scrubber system stack (SV09) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

#### D.2.9 Visible Emissions Notations

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- (a) Visible emission notations of the stack exhaust from the scrubber system stack (SV09) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take

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

**D.2.10 Scrubber Pressure Drop and Flow Rate [326 IAC 8-5-6]**

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The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber CE10 at least once per day when the fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 2.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 35 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

**D.2.11 Scrubber Detection**

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In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

**D.2.12 Record Keeping Requirements [326 IAC 8-5-6]**

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- (a) To document compliance with Condition D.2.9, the Permittee shall maintain records of once per day visible emission notations of the stack SV09. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).
- (b) To document compliance with Condition D.2.10, the Permittee shall maintain daily records of pressure drop and flow rate for scrubber CE10 during normal operation. The Permittee shall include in its daily record when a pressure drop or flow rate reading is not taken and the reason for the lack of a pressure drop or flow rate reading (e.g., the process did not operate that day).
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

### SECTION D.3 FACILITY OPERATION CONDITIONS – Distillation, and DDGS Drying and Cooling

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

- (f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons of ethanol per year, controlled by a scrubber (CE09) and two thermal oxidizers (CE15 and CE17), with emissions exhausted through stacks SV13 and SV14. This process consists of the following:
- (1) One (1) slurry tank, identified as EU17, approved for construction in 2007.
  - (2) One (1) liquefaction tank, identified as EU18, approved for construction in 2007.
  - (3) Two (2) beer columns, identified as EU19 and EU20, approved for construction in 2007.
  - (4) Two (2) strippers, identified as EU21 and EU22, approved for construction in 2007.
  - (5) Two (2) rectifiers, identified as EU23, and EU24, approved for construction in 2007.
  - (6) One (1) multiple-effect evaporator, identified as EU25, approved for construction in 2007.
  - (7) One (1) process condensate tank, identified as EU26, approved for construction in 2007.
  - (8) One (1) whole stillage tank, identified as EU27, approved for construction in 2007.
  - (9) One (1) thin stillage tank, identified as EU28, approved for construction in 2007.
  - (10) One (1) syrup tank, identified as EU29, approved for construction in 2007.
  - (11) Four (4) centrifuges, identified as EU30, EU31, EU32 and EU33, approved for construction in 2007.
  - (12) Four (4) molecular sieves, identified as EU34, EU35, EU36 and EU37, approved for construction in 2007.
  - (13) Two (2) 200-proof condensers, identified as EU38 and EU39, approved for construction in 2007.
- Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.
- (g) Two (2) DDGS dryer and cooling systems, with a maximum throughput rate of 372,201 tons of DDGS per year, consisting of the following:
- (1) One (1) natural gas fired DDGS dryer, identified as EU55, with a maximum heat input rate of 90 MMBtu/hr and one (1) DDGS cooler, identified as EU56, with emissions controlled by one (1) thermal oxidizer (CE15) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV13.
  - (2) One (1) natural gas fired DDGS dryer, identified as EU58, with a maximum heat input rate of 90 MMBtu/hr and one (1) DDGS cooler, identified as EU59, with emissions controlled by one (1) thermal oxidizer (CE17) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV14.

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

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

### ***Construction Conditions***

#### **General Construction Conditions**

##### **D.3.1 Permit No Defense**

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

#### **Effective Date of the Permit**

##### **D.3.2 Effective Date of the Permit [IC13-15-5-3]**

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

##### **D.3.3 Modification to Construction Conditions [326 IAC 2]**

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

### ***Operation Conditions***

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

##### **D.3.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]**

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Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the two thermal oxidizer stacks (SV13 and SV14), which are used to control the emissions from the distillation processes, and the DDGS dryers and cooling system (EU55, EU56, EU58, and EU59):

- (a) PM/PM10 emissions shall not exceed 4.34 lbs/hr each. This is equivalent to 38.0 tons/yr of PM/PM10.
- (b) VOC emissions shall not exceed 3.93 lbs/hr each. This is equivalent to 34.4 tons/yr of VOC.
- (c) CO emissions shall not exceed 7.09 lbs/hr each. This is equivalent to 62.2 tons/yr of CO.
- (d) NO<sub>x</sub> emissions shall not exceed 6.00 lbs/hr each. This is equivalent to 52.6 tons/yr of NO<sub>x</sub>.
- (e) SO<sub>2</sub> emissions shall not exceed 7.00 lbs/hr each. This is equivalent to 61.3 tons/yr of SO<sub>2</sub>.
- (f) Total HAP emissions shall not exceed 1.73 lbs/hr total for both stacks.
- (g) Acetaldehyde emissions shall not exceed 0.66 lbs/hr total for both stacks.

Combined with the PM/PM10, VOC, CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions from other units, the PM/PM10, VOC, CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions from the entire source are each limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

**D.3.5 VOC Emissions [326 IAC 8-5-6]**

Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

- (a) The VOC emissions from the distillation process shall be controlled by scrubber CE09 followed by one of two (2) recuperative thermal oxidizers, identified as CE15 and CE17.
- (b) The overall efficiency (including the capture efficiency and destruction efficiency) for scrubber CE09 and one (1) of two (2) recuperative thermal oxidizers, identified as CE15 and CE17, controlling the distillation process shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.
- (c) The VOC emissions from the DDGS dryers (EU55 and EU58) shall be controlled by one of two (2) recuperative thermal oxidizers, identified as CE15 and CE17.
- (d) The overall efficiency (including the capture efficiency and destruction efficiency) for each of the two (2) recuperative thermal oxidizers, identified as CE15 and CE17, controlling the DDGS dryers shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

**D.3.6 Particulate Emission Limitations [326 IAC 6-3-2]**

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

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU55	DDGS Dryer #1	50	44.6
EU56	DDGS Cooler #1	50	44.6
EU58	DDGS Dryer #2	50	44.6
EU59	DDGS Cooler #2	50	44.6

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

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

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

**D.3.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

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

**Compliance Determination Requirements**

**D.3.8 VOC and HAP Control**

- (a) In order to comply with Conditions D.3.4 and D.3.5, scrubber CE09 followed by one of two (2) recuperative thermal oxidizers, identified as CE15 and CE17 shall be in operation and control emissions from the distillation process at all times that the distillation process is in operation.
- (b) In order to comply with Conditions D.3.4 and D.3.5, one of two (2) thermal oxidizers, identified as CE15 and CE17, shall be in operation and control emissions from the DDGS dryers (EU55 and EU58) and DDGS coolers (EU56 and EU59) at all times that these units are in operation.

**D.3.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6(d)]**

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In order to demonstrate compliance with Conditions D.3.4(b), D.3.5, and D.3.6, the Permittee shall perform PM, PM10, VOC, NOx, SO<sub>2</sub>, CO, and Acetaldehyde testing for the thermal oxidizer stacks (SV13 and SV14) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM10 includes filterable and condensable PM10. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

**D.3.10 Visible Emissions Notations**

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- (a) Visible emission notations of the stack exhaust from thermal oxidizer stacks (SV13 and SV14) shall be performed once per day during normal daylight. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

**D.3.11 Scrubber Pressure Drop and Flow Rate [326 IAC 8-5-6]**

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The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber CE09 at least once per day when the distillation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 2.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 35 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

**D.3.12 Scrubber Detection**

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In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

**D.3.13 Thermal Oxidizer Temperature [326 IAC 8-5-6]**

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- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizers (CE15 and CE17) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as 3-hour average. From the date of startup until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,400°F.
- (b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.3.4 and D.3.5, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate the TO/HRSG systems at or above the 3-hour average temperature as observed during the compliant stack test.

**D.3.14 Duct Pressure or Fan Amperage Parametric Monitoring [326 IAC 8-5-6]**

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- (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.3.4 and D.3.5, as approved by IDEM.
- (b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizers (CE15 and CE17) are in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

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

**D.3.15 Record Keeping Requirements [326 IAC 8-5-6]**

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- (a) To document compliance with Condition D.3.10, the Permittee shall maintain records of once per day visible emission notations of the stacks SV13 and SV14. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).
- (b) To document compliance with Condition D.3.11, the Permittee shall maintain daily records of pressure drop and flow rate for scrubber CE09 during normal operation. The Permittee shall include in its daily record when a pressure drop or flow rate reading is not taken and the reason for the lack of a pressure drop or flow rate reading (e.g., the process did not operate that day).
- (c) To document compliance with Condition D.3.13, the Permittee shall maintain continuous temperature records for the thermal oxidizers (CE15 and CE17) and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.
- (d) To document compliance with Condition D.3.14, the Permittee shall maintain daily records of the duct pressure or fan amperage for the thermal oxidizers (CE15 and CE17). The Permittee shall include in its daily record when a temperature reading is not taken and the reason for the lack of a temperature reading (e.g., the process did not operate that day).
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

## SECTION D.4 FACILITY OPERATION CONDITIONS – Ethanol Loading Racks

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

- (i) One (1) ethanol loading rack for trucks, identified as EU61, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare, identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

- (j) One (1) ethanol loading rack for railcars, identified as EU62, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare, identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

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

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

### ***Construction Conditions***

#### **General Construction Conditions**

##### D.4.1 Permit No Defense

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

#### **Effective Date of the Permit**

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

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

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

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

### ***Operation Conditions***

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

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

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

- (a) The total denatured ethanol load-out from the loading racks EU61 and EU62 shall not exceed 120,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) The total denatured ethanol load-out from the loading rack EU61 shall not exceed 60,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The Permittee shall use enclosed flare CE18 to control the emissions from the ethanol loading racks (EU61 and EU62).
- (d) CO emissions from flare CE18 shall not exceed 0.084 lbs/kgal.
- (e) NOx emissions from flare CE18 shall not exceed 0.0334 lbs/kgal.
- (f) PM/PM10 emissions from flare CE18 shall not exceed 0.0003 lbs/kgal.
- (g) VOC emissions from Flare CE18 shall not exceed 0.102 lbs/kgal when controlling emissions from truck loading rack EU61.
- (h) VOC emissions from Flare CE18 shall not exceed 0.0098 lbs/kgal when controlling emissions from rail loading rack EU62.
- (i) The ethanol loading racks shall utilize submerged loading methods.
- (j) The trucks and railcars shall not use vapor balance services during ethanol loading.

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

#### D.4.5 VOC Emissions [326 IAC 8-5-6]

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Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills) and the Permittee shall comply with the following:

- (a) The VOC emissions from the ethanol loading racks (EU61 and EU62) shall be collected and controlled by enclosed flare CE18.
- (b) The overall VOC control efficiency for the vapor collection system and enclosed flare CE18 (including the capture efficiency and destruction efficiency) shall be at least 98%.

#### D.4.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

### Compliance Determination Requirements

#### D.4.7 VOC Control

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In order to comply with Conditions D.4.4 and D.4.5, enclosed flare CE18 shall be in operation and control emissions from the ethanol loading racks (EU61 and EU62) at all times when these units are in operation.

#### D.4.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6(d)]

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In order to demonstrate compliance with Conditions D.4.4 and D.4.5, the Permittee shall perform PM/PM10, NOx, CO, and VOC testing for enclosed flare CE18, 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.4.9 Flare Pilot Flame [326 IAC 8-5-6]**

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In order to comply with Conditions D.4.4 and D.4.5, the Permittee shall monitor the presence of a flare pilot flame for flare CE18 using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading racks EU61 or EU62 are in operation.

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

**D.4.10 Record Keeping Requirements [326 IAC 8-5-6]**

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- (a) To document compliance with Condition D.4.4(a), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out from loading racks EU61 and EU62.
- (b) To document compliance with Condition D.4.4(b), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out from loading rack EU61.
- (c) To document compliance with Condition D.4.9, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when loading racks EU61 and EU62 are in operation.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**D.4.11 Reporting Requirements**

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A quarterly summary of the information to document compliance with Condition D.4.4(a) and D.4.4(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 "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.5 FACILITY OPERATION CONDITIONS – Boilers

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

- (e) Two (2) natural gas-fired boilers, identified as EU63, and EU64, approved for construction in 2007, each with a maximum heat input rate of 185 MMBtu/hr, with emissions exhausting to stacks SV16, and SV17, respectively.

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

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

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

### *Construction Conditions*

#### **General Construction Conditions**

##### D.5.1 Permit No Defense

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

#### **Effective Date of the Permit**

##### D.5.2 Effective Date of the Permit [IC13-15-5-3]

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

##### D.5.3 Modification to Construction Conditions [326 IAC 2]

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

### *Operation Conditions*

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

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

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the following conditions shall apply:

- (a) NO<sub>x</sub> emissions shall not exceed 8.88 pounds per hour total.
- (b) CO emissions shall not exceed 6.66 pounds per hour total.
- (c) PM emissions shall not exceed 0.74 pounds per hour total.
- (d) PM<sub>10</sub> emissions shall not exceed 1.85 pounds per hour total.
- (e) SO<sub>2</sub> emissions shall not exceed 1.85 pounds per hour total.

Combined with the NO<sub>x</sub>, CO, PM, PM<sub>10</sub>, SO<sub>2</sub>, and VOC emissions from other units, the NO<sub>x</sub>, CO, PM, PM<sub>10</sub>, SO<sub>2</sub>, and VOC emissions from the entire source are limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD), are not applicable.

D.5.5 Particulate Emissions [326 IAC 6-2-4]

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Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating: Emission Limitations for facilities specified in 326 IAC 6-2-1(d)), the PM emissions from the boilers shall not exceed 0.234 pounds per million Btu heat input (lb/MMBtu). This limitation was calculated using the following equation:

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

For these units,  $Q = 370$  MMBtu/hr.

D.5.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

**Compliance Determination Requirements**

D.5.7 Testing Requirements [326 IAC 2-8-5(a) (1), (4)] [326 IAC 2-1.1-11]

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In order to demonstrate compliance with Condition D.5.4, the Permittee shall perform NO<sub>x</sub>, CO, PM, PM<sub>10</sub>, SO<sub>2</sub>, and VOC testing for the boilers, within sixty (60) days after achieving the maximum capacity, but not later than one hundred eighty (180) days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated 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.

## **SECTION D.6 FACILITY OPERATION CONDITIONS – Emergency Generator and Emergency Fire Pump**

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

- (k) One (1) emergency generator, identified as EU65, approved for construction in 2007, with a maximum power output rate of 3,740 horsepower, and exhausting to stack SV18.
- (l) One (1) emergency fire pump, identified as EU66, approved for construction in 2007, with a maximum power output rate of 290 horsepower, and exhausting to stacks SV19.

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

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Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the operating hours for the emergency generator (EU65) and emergency fire pump (EU66) shall each not exceed 100 hours each per twelve (12) consecutive month period with compliance determined at the end of each month.

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

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

#### **D.6.2 Record Keeping Requirements**

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- (a) To document compliance with Condition D.6.1, the Permittee shall maintain monthly records of the operating hours for the emergency generator EU65 and emergency fire pump EU66.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### **D.6.3 Reporting Requirements**

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A quarterly summary of the information to document compliance with Condition D.6.1 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 "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.7 FACILITY OPERATION CONDITIONS – Storage Tanks

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

#### Insignificant Activities

- (f) Other emission units, not regulated by a NESHAP, with PM<sub>10</sub>, NO<sub>x</sub>, and SO<sub>2</sub> 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:
- (2) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
  - (3) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
  - (4) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 264,383 gallons of natural gasoline. [326 IAC 8-4-3]
  - (5) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.
  - (6) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 are considered to be new volatile organic liquid storage tanks.

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

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

#### D.7.1 Volatile Organic Compounds (VOC) [326 IAC 8-4-3]

- (a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank T003 shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.
- (b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, shall be equipped with covers, lids, or seals such that:
  - (1) The cover, lid or seal shall be in the closed position at all times except when in actual use;
  - (2) Automatic bleeder vents shall be closed at all times except when the roof is floated off or landed on the roof leg supports;
  - (3) Rim vents, if provided, shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

- (c) Pursuant to 326 IAC 8-4-3(d) (Petroleum Liquid Storage Facilities), the Permittee shall maintain the following records for a period of two (2) years for tank T003:
- (1) The types of volatile petroleum liquid stored;
  - (2) The maximum true vapor pressure of the liquids as stored; and
  - (3) The results of the inspections performed on the storage vessels.

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

**D.7.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

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

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

**D.7.3 Record Keeping Requirements**

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- (a) To document compliance with Condition D.7.1, the Permittee shall maintain the following records for tank T003:
- (1) The types of volatile petroleum liquid stored;
  - (2) The maximum true vapor pressure of the liquids as stored; and
  - (3) The results of the inspections performed on the storage vessels.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

## SECTION E.1 FACILITY OPERATION CONDITIONS – Equipment Leaks

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

(d) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons per year (as ethanol), controlled by scrubber CE10, with emissions exhausted through stack SV09. This process consists of the following:

- (1) Two (2) yeast tanks, identified as EU40 and EU41, approved for construction in 2007.
- (2) Seven (7) fermenters, identified as EU42 through EU48, approved for construction in 2007.
- (3) One (1) beer well, identified as EU49, approved for construction in 2007.

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

(f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons of ethanol per hour, controlled by a scrubber (CE09) and two thermal oxidizers (CE15 and CE17), with emissions exhausted through stacks SV13 and SV14. This process consists of the following:

- (1) One (1) slurry tank, identified as EU17, approved for construction in 2007.
- (2) One (1) liquefaction tank, identified as EU18, approved for construction in 2007.
- (3) Two (2) beer columns, identified as EU19 and EU20, approved for construction in 2007.
- (4) Two (2) strippers, identified as EU21 and EU22, approved for construction in 2007.
- (5) Two (2) rectifiers, identified as EU23, and EU24, approved for construction in 2007.
- (6) One (1) multiple-effect evaporator, identified as EU25, approved for construction in 2007.
- (7) One (1) process condensate tank, identified as EU26, approved for construction in 2007.
- (8) One (1) whole stillage tank, identified as EU27, approved for construction in 2007.
- (9) One (1) thin stillage tank, identified as EU28, approved for construction in 2007.
- (10) One (1) syrup tank, identified as EU29, approved for construction in 2007.
- (11) Four (4) centrifuges, identified as EU30, EU31, EU32 and EU33, approved for construction in 2007.
- (12) Four (4) molecular sieves, identified as EU34, EU35, EU36 and EU37, approved for construction in 2007.
- (13) Two (2) 200-proof condensers, identified as EU38 and EU39, approved for construction in 2007.

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

(i) One (1) ethanol loading rack for trucks, identified as EU61, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare,

identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

- (j) One (1) ethanol loading rack for railcars, identified as EU62, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare, identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

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

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

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

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

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

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue,  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

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

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

#### **§ 60.480 Applicability and designation of affected facility.**

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

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

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

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

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

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

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

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

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

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

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

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

**§ 60.481 Definitions.**

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

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

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

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

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

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

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

Table for Determining Applicable for B

Subpart applicable to facility	Value of B to be used in equation
VV.....	12.5
DDD.....	12.5
GGG.....	7.0
KKK.....	4.5

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### **§ 60.482-1 Standards: General.**

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

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

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

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

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

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

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

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in §60.482–1(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

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

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

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

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

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

(1) Each dual mechanical seal system is—

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### **§ 60.482-3 Standards: Compressors.**

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

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

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

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

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

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

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

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

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

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

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

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

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft

back to a process or fuel gas system or to a control device that complies with the requirements of §60.482–10, except as provided in paragraph (i) of this section.

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

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

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

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

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

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

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

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

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

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

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

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

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

#### **§ 60.482-5 Standards: Sampling connection systems.**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**§ 60.482-9 Standards: Delay of repair.**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### **§ 60.485 Test methods and procedures.**

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

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

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

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

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

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

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

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

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

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

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

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

(e) The owner or operator shall demonstrate that 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<sub>2</sub>O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.

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

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

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

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

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

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

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

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

Where:

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

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

$K_1$  = 8.706 m/sec (metric units)

= 28.56 ft/sec (English units)

$K_2$  = 0.7084 m<sup>4</sup>/(MJ-sec) (metric units)

= 0.087 ft<sup>4</sup>/(Btu-sec) (English units)

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

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

Where:

$K$  = Conversion constant,  $1.740 \times 10^7$  (g-mole)(MJ)/(ppm-scm-kcal) (metric units)

=  $4.674 \times 10^8$  [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

$C_i$  = Concentration of sample component "i," ppm

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

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

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

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

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

#### **§ 60.486 Recordkeeping requirements.**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) A schedule of monitoring.

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

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

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

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

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

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

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

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

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

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

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

### **§ 60.487 Reporting requirements.**

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

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

(1) Process unit identification.

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

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

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

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

(1) Process unit identification.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## SECTION E.2 FACILITY OPERATION CONDITIONS - Boilers

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

- (e) Two (2) natural gas-fired boilers, identified as EU63, and EU64, approved for construction in 2007, each with a maximum heat input rate of 185 MMBtu/hr, with emissions exhausting to stacks SV16, and SV17, respectively.

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

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

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

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

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for boilers EU63 and EU64, except as otherwise specified in 40 CFR Part 60, Subpart Db.
- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue,  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

Pursuant to 40 CFR Part 60, Subpart Db, the Permittee shall comply with the provisions of Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units, which are incorporated by reference as 326 IAC 12, for boilers EU63 and EU64 as follows:

### Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

#### § 60.40b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour).

(j) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1986 is not subject to Subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators, §60.40).

[52 FR 47842, Dec. 16, 1987, as amended at 63 FR 49454, Sept. 16, 1998; 65 FR 61752, Oct. 17, 2000; 71 FR 9881, Feb. 27, 2006; 71 FR 33400, June 9, 2006]

#### § 60.41b Definitions.

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

*Annual capacity factor* means the ratio between the actual heat input to a steam generating unit from the fuels listed in §60.42b(a), §60.43b(a), or §60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

*Byproduct/waste* means any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not byproduct/waste for the purpose of this subpart.

*Chemical manufacturing plants* means industrial plants which are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28.

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

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

*Cogeneration*, also known as combined heat and power, means a facility that simultaneously produces both electric (or mechanical) and useful thermal energy from the same primary energy source.

*Combined cycle system* means a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a heat recovery steam generating unit.

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

*Distillate oil* means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396-78, 89, 90, 92, 96, or 98, Standard Specifications for Fuel Oils (incorporated by reference—see §60.17).

*Dry flue gas desulfurization technology* means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

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

*Emerging technology* means any sulfur dioxide control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the Administrator and received approval to operate as an emerging technology under §60.49b(a)(4).

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

*Fluidized bed combustion technology* means combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent

materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

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

*Full capacity* means operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity.

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

*Heat release rate* means the steam generating unit design heat input capacity (in MW or Btu/hour) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

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

*High heat release rate* means a heat release rate greater than  $730,000 \text{ J/sec-m}^3$  ( $70,000 \text{ Btu/hour-ft}^3$ ).

*Lignite* means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388–77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—see §60.17).

*Low heat release rate* means a heat release rate of  $730,000 \text{ J/sec-m}^3$  ( $70,000 \text{ Btu/hour-ft}^3$ ) or less.

*Mass-feed stoker steam generating unit* means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

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

*Municipal-type solid waste* means refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

*Natural gas* means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or (2) liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835–82, 86, 87, 91, or 97, "Standard Specification for Liquid Petroleum Gases" (IBR—see §60.17).

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

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

*Petroleum refinery* means industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29.

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

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

*Pulp and paper mills* means industrial plants which are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26.

*Pulverized coal-fired steam generating unit* means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units.

*Residual oil* means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396–78, Standard Specifications for Fuel Oils (IBR—see §60.17).

*Spreader stoker steam generating unit* means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

*Steam generating unit* means a device that combusts any fuel or byproduct/waste to produce steam or to heat water or any other heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.

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

*Very low sulfur oil* for units constructed, reconstructed, or modified on or before February 28, 2005, means an oil that contains no more than 0.5 weight percent sulfur or that, when combusted without sulfur dioxide emission control, has a sulfur dioxide emission rate equal to or less than 215 ng/J (0.5 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005, *very low sulfur oil* means an oil that contains no more than 0.3 weight percent sulfur or that, when combusted without sulfur dioxide emission control, has a sulfur dioxide emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input.

*Wet flue gas desulfurization technology* means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

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

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

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51819, Dec. 18, 1989; 65 FR 61752, Oct. 17, 2000; 66 FR 49834, Oct. 1, 2001; 71 FR 9881, Feb. 27, 2006]

#### **§ 60.44b Standard for nitrogen oxides.**

(a) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides (expressed as NO<sub>2</sub>) in excess of the following emission limits:

Fuel/Steam generating unit type	Nitrogen oxide emission limits ng/J (lb/million Btu) (expressed as NO2) heat input
-----	
(1) Natural gas and distillate oil, except (4):	
(i) Low heat release rate.....	43 (0.10)
(ii) High heat release rate.....	86 (0.20)
(2) Residual oil:	
(i) Low heat release rate.....	130 (0.30)
(ii) High heat release rate.....	170 (0.40)
-----	
Fuel/Steam generating unit type	Nitrogen oxide emission limits ng/J (lb/million Btu) (expressed as NO2) heat input
-----	
(3) Coal:	
(i) Mass-feed stoker.....	210 (0.50)
(ii) Spreader stoker and fluidized bed combustion.....	260 (0.60)
(iii) Pulverized coal.....	300 (0.70)
(iv) Lignite, except (v).....	260 (0.60)
(v) Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace.....	340 (0.80)
(vi) Coal-derived synthetic fuels.....	210 (0.50)
(4) Duct burner used in a combined cycle system:	
(i) Natural gas and distillate oil.....	86 (0.20)
(ii) Residual oil.....	170 (0.40)
-----	

(h) For purposes of paragraph (i) of this section, the nitrogen oxide standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

**§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.**

(a) The particulate matter emission standards and opacity limits under §60.43b apply at all times except during periods of startup, shutdown, or malfunction, and as specified in paragraphs (i) and (j) of this section. The nitrogen oxides emission standards under §60.44b apply at all times.

(c) Compliance with the nitrogen oxides emission standards under §60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraphs (g) and (h) of this section, as applicable.

(e) To determine compliance with the emission limits for nitrogen oxides required under §60.44b, the owner or operator of an affected facility shall conduct the performance test as required under §60.8 using the continuous system for monitoring nitrogen oxides under §60.48(b).

(1) For the initial compliance test, nitrogen oxides from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the nitrogen oxides emission standards under §60.44b. The 30-day average

emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

**§ 60.48b Emission monitoring for particulate matter and nitrogen oxides.**

(b) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility subject to a nitrogen oxides standard under §60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere; or

(c) The continuous monitoring systems required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor required by paragraph (b) of this section and required under §60.13(h) shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under §60.44b. The 1-hour averages shall be calculated using the data points required under §60.13(h)(2).

(e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

(2) For affected facilities combusting coal, oil, or natural gas, the span value for nitrogen oxides is determined as follows:

Fuel	Span values for nitrogen oxides (PPM)
Natural gas.....	500
Oil.....	500
Coal.....	1,000
Mixtures.....	$500(x+y)+1,000z$

where:

x is the fraction of total heat input derived from natural gas,

y is the fraction of total heat input derived from oil, and

z is the fraction of total heat input derived from coal.

(f) When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(g) The owner or operator of an affected facility that has a heat input capacity of 73 MW (250 million Btu/hour) or less, and which has an annual capacity factor for residual oil having a nitrogen content of 0.30 weight percent or less, natural gas, distillate oil, or any mixture of these fuels, greater than 10 percent (0.10) shall:

(1) Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section, or

(2) Monitor steam generating unit operating conditions and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to §60.49b(c).

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51825, Dec. 18, 1989; 63 FR 49455, Sept. 16, 1998; 66 FR 18553, Apr. 10, 2001; 71 FR 9884, Feb. 27, 2006]

**§ 60.49b Reporting and recordkeeping requirements.**

(a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by §60.7. This notification shall include:

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

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

(b) The owner or operator of each affected facility subject to the sulfur dioxide, particulate matter, and/or nitrogen oxides emission limits under §§60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B. The owner or operator of each affected facility described in §60.44b(j) or §60.44b(k) 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) The owner or operator of each affected facility subject to the nitrogen oxides standard of §60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions under the provisions of §60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored under §60.48b(g)(2) and the records to be maintained under §60.49b(j). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. The plan shall:

(1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and nitrogen oxides emission rates (i.e., ng/J or lbs/million Btu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (i.e., the ratio of primary air to secondary and/or tertiary air) and the level of excess air (i.e., flue gas oxygen level);

(2) Include the data and information that the owner or operator used to identify the relationship between nitrogen oxides emission rates and these operating conditions;

(3) Identify how these operating conditions, including steam generating unit load, will be monitored under §60.48b(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under §60.49b(j).

If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan.

(d) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste 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.

(g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the nitrogen oxides standards under §60.44b 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<sub>2</sub>) (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 §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken.

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

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

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

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

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

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

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for nitrogen oxides under §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

(v) The owner or operator of an affected facility may submit electronic quarterly reports for SO<sub>2</sub> and/or NO<sub>x</sub> and/or opacity in lieu of submitting the written reports required under paragraphs (h), (i), (j), (k) or (l) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.

(w) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51820, 51825, Dec. 18, 1989; 60 FR 28062, May 30, 1995; 61 FR 14031, Mar. 29, 1996; 62 FR 52641, Oct. 8, 1997; 63 FR 49455, Sept. 16, 1998; 64 FR 7464, Feb. 12, 1999; 65 FR 13243, Mar. 13, 2000; 69 FR 40773, July 7, 2004]

### SECTION E.3 FACILITY OPERATION CONDITIONS – Storage Tanks

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

- (f) Other emission units, not regulated by a NESHAP, with PM<sub>10</sub>, NO<sub>x</sub>, and SO<sub>2</sub> 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:
- (2) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
  - (3) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
  - (4) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 264,383 gallons of natural gasoline. [326 IAC 8-4-3]
  - (5) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.
  - (6) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 are considered to be new volatile organic liquid storage tanks.

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

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

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

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for tanks T001, T002, T003, T004, and T005, except as otherwise specified in 40 CFR Part 60, Subpart Kb.
- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue,  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

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

Pursuant to 40 CFR Part 60, Subpart Kb, the Permittee shall comply with the provisions of Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), which are incorporated by reference as 326 IAC 12, for tanks T001, T002, T003, T004, and T005 as follows:

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

### **§ 60.110b Applicability and designation of affected facility.**

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

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

### **§ 60.111b Definitions.**

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

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

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

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

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

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

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

- (1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see §60.17); or
- (2) As obtained from standard reference texts; or
- (3) As determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17);
- (4) Any other method approved by the Administrator.

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

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

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

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

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

- (1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;
- (2) Subsurface caverns or porous rock reservoirs; or
- (3) Process tanks.

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

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

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

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

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

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

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

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

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

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

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

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

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

- (v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
- (vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.
- (vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.
- (viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- (ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

#### **§ 60.113b Testing and procedures.**

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

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

- (1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.
- (2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.
- (3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):
  - (i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or
  - (ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.
- (4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.
- (5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30

days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

#### **§ 60.115b Reporting and recordkeeping requirements.**

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

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

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

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

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

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

#### **§ 60.116b Monitoring of operations.**

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

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

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

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

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

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

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

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

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

(3) For other liquids, the vapor pressure:

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

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

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

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

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

**§ 60.117b Delegation of authority.**

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

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

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

## SECTION E.4 FACILITY OPERATION CONDITIONS

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

- (k) One (1) emergency generator, identified as EU65, approved for construction in 2007, with a maximum power output rate of 3,740 horsepower, and exhausting to stack SV18.
- (l) One (1) emergency fire pump, identified as EU66, approved for construction in 2007, with a maximum power output rate of 290 horsepower, and exhausting to stacks SV19.

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

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

#### E.4.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for emergency generator EU037, except as otherwise specified in 40 CFR Part 60, Subpart IIII.
- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue,  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

#### E.4.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60, Subpart IIII] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart IIII, the Permittee shall comply with the provisions of Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, which are incorporated by reference as 326 IAC 12, for emergency generator EU037 as follows:

### Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

**Source:** 71 FR 39172, July 11, 2006, unless otherwise noted.

#### What This Subpart Covers

##### § 60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:

(i) Manufactured after April 1, 2006 and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.

**§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?**

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

**§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?**

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

**Fuel Requirements for Owners and Operators**

**§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?**

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

(c) Owners and operators of pre-2011 model year stationary CI ICE subject to this subpart may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of paragraphs (a) and (b) of this section beyond the dates required for the purpose of using up existing fuel inventories. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the owner or operator is required to submit a new petition to the Administrator.

**Other Requirements for Owners and Operators**

**§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model year?**

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (f) of this section after the dates specified in paragraphs (a) through (f) of this section.

(h) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

**§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?**

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine.

**Compliance Requirements**

**§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?**

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

(e) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. For owners and operators of

emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited.

### Testing Requirements for Owners and Operators

#### § 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (d) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \quad (\text{Eq. 1})$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

### Notification, Reports, and Records for Owners and Operators

#### § 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

### General Provisions

#### § 60.4218 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.

## Definitions

### § 60.4219 What definitions apply to this subpart?

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

*Combustion turbine* means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

*Compression ignition* means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

*Diesel fuel* means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

*Diesel particulate filter* means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

*Emergency stationary internal combustion engine* means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

*Engine manufacturer* means the manufacturer of the engine. See the definition of “manufacturer” in this section.

*Fire pump engine* means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

*Manufacturer* has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

*Maximum engine power* means maximum engine power as defined in 40 CFR 1039.801.

*Model year* means either:

- (1) The calendar year in which the engine was originally produced, or
- (2) The annual new model production period of the engine manufacturer if it is different than the calendar year. This must include January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year. For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was originally produced.

*Other internal combustion engine* means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

*Reciprocating internal combustion engine* means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

*Rotary internal combustion engine* means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

*Spark ignition* means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

*Stationary internal combustion engine* means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

*Subpart* means 40 CFR part 60, subpart IIII.

*Useful life* means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for useful life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for useful life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

**Tables to Subpart IIII of Part 60**

**Table 1 to Subpart IIII of Part 60. Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder [As stated in §§ 60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]**

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NOX	HC	NOX	CO	PM
KW<8 (HP<11).....	10.5 (7.8)	.....	.....	8.0 (6.0)	1.0 (0.75)
8[le]KW<19 (11[le]HP<25).....	9.5 (7.1)	.....	.....	6.6 (4.9)	0.80 (0.60)
19[le]KW<37 (25[le]HP<50).....	9.5 (7.1)	.....	.....	5.5 (4.1)	0.80 (0.60)
37[le]KW<56 (50[le]HP<75).....	.....	.....	9.2 (6.9)	.....	.....
56[le]KW<75 (75[le]HP<100).....	.....	.....	9.2 (6.9)	.....	.....
75[le]KW<130 (100[le]HP<175).....	.....	.....	9.2 (6.9)	.....	.....
130[le]KW<225 (175[le]HP<300).....	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225[le]KW<450 (300[le]HP<600).....	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450[le]KW[le]560 (600[le]HP[le]750).....	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750).....	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

**Table 3 to Subpart IIII of Part 60. Certification Requirements for Stationary Fire Pump Engines**  
**[As stated in § 60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:]**

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to § 60.4202(d)
KW<75 (HP<100).....	2011
75[le]KW<130 (100[le]HP<175).....	2010
130[le]KW[le]560 (175[le]HP[le]750).....	2009
KW>560 (HP>750).....	2008

**Table 4 to Subpart IIII of Part 60. Emission Standards for Stationary Fire Pump Engines**

**[As stated in §§ 60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]**

Maximum engine power	Model year(s)	NMHC + NOX	CO	PM
KW<8 (HP<11).....	2010 and earlier.....	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+.....	7.5 (5.6)	.....	0.40 (0.30)
8[le]KW<19 (11[le]HP<25).....	2010 and earlier.....	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+.....	7.5 (5.6)	.....	0.40 (0.30)
19[le]KW<37 (25[le]HP<50).....	2010 and earlier.....	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+.....	7.5 (5.6)	.....	0.30 (0.22)
37[le]KW<56 (50[le]HP<75).....	2010 and earlier.....	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ \1\.....	4.7 (3.5)	.....	0.40 (0.30)
56[le]KW<75 (75[le]HP<100).....	2010 and earlier.....	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ \1\.....	4.7 (3.5)	.....	0.40 (0.30)
75[le]KW<130 (100[le]HP<175).....	2009 and earlier.....	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010+ \2\.....	4.0 (3.0)	.....	0.30 (0.22)
130[le]KW<225 (175[le]HP<300).....	2008 and earlier.....	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ \3\.....	4.0 (3.0)	.....	0.20 (0.15)
225[le]KW<450 (300[le]HP<600).....	2008 and earlier.....	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ \3\.....	4.0 (3.0)	.....	0.20 (0.15)
450[le]KW[le]560 (600[le]HP[le]750).....	2008 and earlier.....	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+.....	4.0 (3.0)	.....	0.20 (0.15)
KW>560 (HP>750).....	2007 and earlier.....	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+.....	6.4 (4.8)	.....	0.20 (0.15)

\1\ For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the

emission limitations for 2010 model year engines.

\2\ For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine

power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

\3\ In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a

rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

**Table 5 to Subpart IIII of Part 60. Labeling and Recordkeeping Requirements for New Stationary Emergency Engines**  
**[You must comply with the labeling requirements in § 60.4210(f) and the recordkeeping requirements in § 60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]**

Engine power	Starting model year
19[le]KW<56 (25[le]HP<75).....	2013
56[le]KW<130 (75[le]HP<175).....	2012
KW>=130 (HP>=175).....	2011

**Table 8 to Subpart IIII of Part 60. Applicability of General Provisions to Subpart IIII**  
**[As stated in § 60.4218, you must comply with the following applicable General Provisions:]**

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1.....	General applicability of the General Provisions.	Yes.....	
§ 60.2.....	Definitions.....	Yes.....	Additional terms defined in § 60.4219.
§ 60.3.....	Units and abbreviations...	Yes.....	
§ 60.4.....	Address.....	Yes.....	
§ 60.5.....	Determination of construction or modification.	Yes.....	
§ 60.6.....	Review of plans.....	Yes.....	
§ 60.7.....	Notification and Recordkeeping.	Yes.....	Except that § 60.7 only applies as specified in § 60.4214(a).
§ 60.8.....	Performance tests.....	Yes.....	Except that § 60.8 only applies to stationary CI ICE with a displacement of (>=30 liters per cylinder and engines that are not certified.
§ 60.9.....	Availability of information.	Yes.....	
§ 60.10.....	State Authority.....	Yes.....	
§ 60.11.....	Compliance with standards and maintenance requirements.	No.....	Requirements are specified in subpart IIII.
§ 60.12.....	Circumvention.....	Yes.....	
§ 60.13.....	Monitoring requirements...	Yes.....	Except that § 60.13 only applies to stationary CI ICE with a displacement of (>=30 liters per cylinder.
§ 60.14.....	Modification.....	Yes.....	
§ 60.15.....	Reconstruction.....	Yes.....	
§ 60.16.....	Priority list.....	Yes.....	
§ 60.17.....	Incorporations by reference.	Yes.....	
§ 60.18.....	General control device requirements.	No.....	
§ 60.19.....	General notification and reporting requirements.	Yes.....	

## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY

### FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Renewable Agricultural Energy, Inc.  
Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
Cayuga, Indiana 47928  
Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
FESOP Permit No.: F165-24286-00082

**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  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
Phone: 317-233-0178  
Fax: 317-233-6865**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
EMERGENCY OCCURRENCE REPORT**

Source Name: Renewable Agricultural Energy, Inc.  
Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
Cayuga, Indiana 47928  
Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
FESOP Permit No.: F165-24286-00082

**This form consists of 2 pages**

**Page 1 of 2**

- |   |
|---|
| <input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none"><li>• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and</li><li>• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16</li></ul> |
|---|

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 <sub>2</sub> , VOC, NO <sub>x</sub> , 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: Renewable Agricultural Energy, Inc.  
 Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
 Cayuga, Indiana 47928  
 Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
 FESOP Permit No.: F165-24286-00082  
 Facility: Grain Receiving and DDGS Handling Operations – straight trucks  
 Parameter: PM and PM10 emissions  
 Limit: The total grain received by straight trucks shall not exceed 25,000 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: Renewable Agricultural Energy, Inc.  
Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
Cayuga, Indiana 47928  
Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
FESOP Permit No.: F165-24286-00082  
Facility: Grain Receiving and DDGS Handling Operations – hopper trucks  
Parameter: PM and PM10 emissions  
Limit: The total grain received by hopper trucks shall not exceed 1,166,045 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: Renewable Agricultural Energy, Inc.  
Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
Cayuga, Indiana 47928  
Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
FESOP Permit No.: F165-24286-00082  
Facility: DDGS Loadout  
Parameter: PM and PM10 emissions  
Limit: The total DDGS loadout shall not exceed 372,212 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: Renewable Agricultural Energy, Inc.  
 Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
 Cayuga, Indiana 47928  
 Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
 FESOP Permit No.: F165-24286-00082  
 Facility: Loading Racks EU61 and EU62  
 Parameter: Denatured Ethanol Load-out  
 Limit: The total denatured ethanol load-out shall not exceed 120,000,000 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: Renewable Agricultural Energy, Inc.  
Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
Cayuga, Indiana 47928  
Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
FESOP Permit No.: F165-24286-00082  
Facility: Loading Rack EU61  
Parameter: Denatured Ethanol Load-out  
Limit: The total denatured ethanol load-out for loading rack EU61 shall not exceed  
60,000,000 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: Renewable Agricultural Energy, Inc.  
Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
Cayuga, Indiana 47928  
Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
FESOP Permit No.: F165-24286-00082  
Facility: emergency generator (EU65)  
Parameter: operating hours  
Limit: The operating hours for the emergency generator (EU65) shall not exceed 100  
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

### FESOP Quarterly Report

Source Name: Renewable Agricultural Energy, Inc.  
 Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
 Cayuga, Indiana 47928  
 Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
 FESOP Permit No.: F165-24286-00082  
 Facility: emergency fire pump (EU66)  
 Parameter: operating hours  
 Limit: The operating hours for the emergency fire pump (EU66) shall not exceed 100  
 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)  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Renewable Agricultural Energy, Inc.  
Source Address: State Road 63 between County Road 310 North and County Road 200 North,  
Cayuga, Indiana 47928  
Mailing Address: 1900 Ninth Street Suite 200, Boulder, CO 80302  
FESOP Permit No.: F165-24286-00082

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

Mail to: Permit Administration & Development Section  
Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

Renewable Agricultural Energy, Inc.  
1900 Ninth Street Suite 200  
Boulder, CO 80302

Affidavit of Construction

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

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

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

3. By virtue of my position with \_\_\_\_\_, I have personal  
(Company Name)  
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of \_\_\_\_\_.  
(Company Name)

4. I hereby certify that Renewable Agricultural Energy, Inc., State Road 63 between County Road 310 North and County Road 200 North, Cayuga, Indiana 47928, completed construction of the ethanol production plant on \_\_\_\_\_ in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on \_\_\_\_\_ and as permitted pursuant to New Source Construction Permit and FESOP No. 165-24286-00082, Plant ID No. 165-00082 issued on \_\_\_\_\_.

5. Additional (operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature \_\_\_\_\_

Date \_\_\_\_\_

STATE OF INDIANA)  
)SS

COUNTY OF \_\_\_\_\_ )

Subscribed and sworn to me, a notary public in and for \_\_\_\_\_ County and State of Indiana on this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

My Commission expires:

Signature \_\_\_\_\_

\_\_\_\_\_  
Name (typed or printed)

## **ATTACHMENT A**

### **Fugitive Dust Control Plan**

#### **Renewable Agricultural Energy, Inc.**

#### **Cayuga, Indiana**

Renewable Agricultural Energy, Inc. is proposing to construct a fuel grade ethanol production facility near Cayuga, Indiana. The facility will produce 114 million gallons of undenatured ethanol per year. This Fugitive Dust Control Plan has been prepared pursuant to Title 326 of the Indiana Administrative Code (IAC), Article 6, Rule 5. The plan outlines all potential particulate matter (PM) fugitive emission sources as well as the control methods proposed for each source.

The Fugitive Dust Control Plan will be implemented once construction of the facility has been completed. The plan will be kept onsite and updated as needed to prevent fugitive PM emissions from the operation of the ethanol facility.

#### **Potential Emission Sources**

There will be three main potential sources of fugitive PM emissions associated with the operation of the ethanol plant. Emission sources will include the following:

- Grain Receiving and Handling
- Dried Distillers Grain with Solubles (DDGS) Handling and Loadout
- Haul Road Traffic (Paved and Unpaved)
- Wetcake Storage

#### **Control Methods**

##### **Grain Receiving and Handling**

Potential PM produced from the grain receiving and handling processes are collected and controlled by high efficiency fabric filter baghouses. In order to limit the amount of uncaptured dust during the grain receiving process, the receiving pits will be located within a building. The distance from the receiving pits to the building door exits allows for the uncaptured dust to settle prior to dispersing to ambient air.

##### **DDGS Handling and Loadout**

Potential PM produced from the DDGS handling and loadout processes are collected and controlled by high efficiency fabric filter baghouses. In order to limit the amount of uncaptured dust during the DDGS loadout process, the loadout spouts will be located within a building. The distance from the loadout spouts to the building door exits allows for the uncaptured dust to settle prior to dispersing to ambient air.

##### **Haul Road Traffic (Paved and Unpaved)**

Through the hauling process, fugitive dust is generated from the contact between the roads and the vehicle tires causing the re-suspension of loose material on the road surface. The facility proposes the following dust control measures to mitigate emissions from the truck hauling activities at the site:

- Haul roads at the site will be paved;
- Travel on unpaved surfaces will be limited;
- The areas near the grain receiving pits and DDGS loadout spouts will be swept when excess dust is present;
- Visual inspections of the haul roads will be performed daily; and
- Haul roads at the site will be swept/vacuumed when silt has accumulated to visible levels on the road.

##### **Wetcake Storage**

Wetcake production, as an option to drying and producing DDGS has potential PM emissions. However, PM emissions will be limited due to the moisture content of wetcake (approximately 68% moisture). The moisture in wetcake acts as a PM control, and due to the shelf life of wetcake, the product will be loaded out before it can dry.

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

**Addendum to the Technical Support Document  
For a New Source Review and a Federally Enforceable State Operating Permit  
(FESOP)**

**Source Background and Description**

Source Name:	Renewable Agricultural Energy, Inc.
Source Location:	State Road 63 between County Road 310 North and County Road 200 North, Cayuga, Indiana 47928
County:	Vermillion
SIC Code:	2869
Operation Permit No.:	F165-24286-00082
Permit Reviewer:	ERG/MP

On May 20, 2007, the Office of Air Quality (OAQ) had a notice published in the Daily Clintonian, Clinton, Indiana stating that Renewable Agricultural Energy, Inc. had applied for a New Source Construction and Federally Enforceable State Operating Permit (FESOP) to operate an ethanol manufacturing facility with control. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

A comment on the draft permit was received via phone call from Jeff Lamb on June 14, 2007.

**Comment 1:**

Mr. Lamb is concerned that the facility is being located too close to a populated area and that the public welfare is not being protected. Mr. Lamb requested that his opposition to the construction of this facility be put on public record.

**Response to Comment 1:**

The air pollution control permit will ensure that the construction and operation of all equipment at the Renewable Agricultural Energy, Inc. facility will comply with all state and federal air quality rules and regulations. OAQ and the U.S. EPA have established rules and regulations to protect air quality and the health of Indiana citizens based on current knowledge of air pollution impacts. As applicable to the proposed facility, these rules and regulations have been incorporated into the proposed permit. These rules are designed to protect human health and the environment. No change has been made to the permit as a result of this comment.

# Indiana Department of Environmental Management Office of Air Quality

## Technical Support Document (TSD) for a New Source Review and a Federally Enforceable State Operating Permit (FESOP)

### Source Background and Description

Source Name:	Renewable Agricultural Energy, Inc.
Source Location:	State Road 63 between County Road 310 North and County Road 200 North, Cayuga, Indiana 47928
County:	Vermillion
SIC Code:	2869
Operation Permit No.:	F165-24286-00082
Permit Reviewer:	ERG/MP

The Office of Air Quality (OAQ) has reviewed a FESOP application from Renewable Agricultural Energy, Inc. relating to the operation of an ethanol production plant.

### History

Renewable Agricultural Energy, Inc. submitted an application on February 8, 2007, to IDEM, OAQ applying for a Federally Enforceable State Operating Permit to construct and operate a new ethanol production plant located on State Road 63 between County Road 310 North and County Road 200 North, Cayuga, Indiana 47928. This is the first air permit approval issued to this source.

### Permitted Emission Units and Pollution Control Equipment

There are no permitted emission units at this source during this review process.

### Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

### New Emission Units and Pollution Control Equipment

The application includes information relating to the prior approval for the construction and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

- (a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouses CE01 and CE02, exhausting through stacks SV01 and SV02, and consisting of the following:
  - (1) Three (3) grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2) and EU03 (Grain Rail Dump Pit/Auger #1), approved for construction in 2007, each with a maximum throughput rate of 980 tons of grain per hour, controlled by CE01, and exhausting through SV01.
  - (2) Grain receiving and handling equipment, identified as EU04 (Associated Conveyors), approved for construction in 2007, with a maximum throughput rate

of 4,200 tons of grain per hour, controlled by CE01, and exhausting through SV01

- (3) Grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), approved for construction in 2007, each with a maximum throughput rate of 4,200 tons of grain per hour, controlled by CE02, and exhausting through SV02.
- (b) Three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68, approved for construction in 2007, with a capacity of 4,200 tons of grain per hour for each transfer conveyor and 770,000 bushels of corn per silo; controlled by Bin Vent Filters CE03, CE04, and CE19, respectively, and exhausting through stacks SV03, SV04, and SV20, respectively.
- (c) One (1) corn scalper, and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, approved for construction in 2007 with the corn scalper having a maximum throughput rate of 840 tons/hr and each hammermill with a maximum throughput rate of 42 tons per hour. The corn scalper and one (1) hammermill is controlled by CE05 which exhausts through SV05 and the three (3) other hammermills are individually controlled by CE06, CE07 and CE08, which exhaust through SV06, SV07 and SV08, respectively.
- (d) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons per year (as ethanol), controlled by scrubber CE10, with emissions exhausted through stack SV09. This process consists of the following:
  - (1) Two (2) yeast tanks, identified as EU40 and EU41, approved for construction in 2007.
  - (2) Seven (7) fermenters, identified as EU42 through EU48, approved for construction in 2007.
  - (3) One (1) beer well, identified as EU49, approved for construction in 2007.

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

- (e) Two (2) natural gas-fired boilers, identified as EU63, and EU64, approved for construction in 2007, each with a maximum heat input rate of 185 MMBtu/hr, with emissions exhausting to stacks SV16, and SV17, respectively.

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

- (f) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 114,000,000 gallons of ethanol per year, controlled by a scrubber (CE09) and two thermal oxidizers (CE15 and CE17), with emissions exhausted through stacks SV13 and SV14. This process consists of the following:
  - (1) One (1) slurry tank, identified as EU17, approved for construction in 2007.
  - (2) One (1) liquefaction tank, identified as EU18, approved for construction in 2007.
  - (3) Two (2) beer columns, identified as EU19 and EU20, approved for construction in 2007.
  - (4) Two (2) strippers, identified as EU21 and EU22, approved for construction in 2007.

- (5) Two (2) rectifiers, identified as EU23, and EU24, approved for construction in 2007.
- (6) One (1) multiple-effect evaporator, identified as EU25, approved for construction in 2007.
- (7) One (1) process condensate tank, identified as EU26, approved for construction in 2007.
- (8) One (1) whole stillage tank, identified as EU27, approved for construction in 2007.
- (9) One (1) thin stillage tank, identified as EU28, approved for construction in 2007.
- (10) One (1) syrup tank, identified as EU29, approved for construction in 2007.
- (11) Four (4) centrifuges, identified as EU30, EU31, EU32 and EU33, approved for construction in 2007.
- (12) Four (4) molecular sieves, identified as EU34, EU35, EU36 and EU37, approved for construction in 2007.
- (13) Two (2) 200-proof condensers, identified as EU38 and EU39, approved for construction in 2007.

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

- (g) Two (2) DDGS dryer and cooling systems, with a maximum throughput rate of 372,201 tons of DDGS per year, consisting of the following:
  - (1) One (1) natural gas fired DDGS dryer, identified as EU55, with a maximum heat input rate of 90 MMBtu/hr and one (1) DDGS cooler, identified as EU56, with emissions controlled by one (1) thermal oxidizer (CE15) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV13.
  - (2) One (1) natural gas fired DDGS dryer, identified as EU58, with a maximum heat input rate of 90 MMBtu/hr and one (1) DDGS cooler, identified as EU59, with emissions controlled by one (1) thermal oxidizer (CE17) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV14.
- (h) One (1) DDGS handling and storage operation, approved for construction in 2007, consisting of the following:
  - (1) Three (3) DDGS silos, identified as EU50, EU51 and EU52, approved for construction in 2007, with a capacity of 3,650 tons of DDGS each, controlled by baghouse CE11, with emissions exhausted to stack SV10.
  - (2) Two (2) DDGS truck loadout spouts, identified as EU53 and EU69, approved for construction in 2007, each with a maximum throughput rate of 55 tons/hr of DDGS, controlled individually by baghouses CE12 and CE20 with emissions exhausted to stacks SV11 and SV21, respectively.
  - (3) One (1) DDGS rail loadout spout, identified as EU54, approved for construction in 2007, with a maximum throughput rate of 100 tons/hr of DDGS, controlled by baghouse CE13 with emissions exhausted to stack SV12.

- (i) One (1) ethanol loading rack for trucks, identified as EU61, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare, identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

- (j) One (1) ethanol loading rack for railcars, identified as EU62, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting to a flare, identified as CE18, with a maximum pilot flame heat input capacity of 0.092 MMBtu/hr, exhausting through stack SV15.

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

- (k) One (1) emergency generator, identified as EU65, approved for construction in 2007, with a maximum power output rate of 3,740 horsepower, and exhausting to stack SV18.

Under NSPS, Subpart IIII, the emergency generator, EU65, is considered to be an affected facility.

- (l) One (1) emergency fire pump, identified as EU66, approved for construction in 2007, with a maximum power output rate of 290 horsepower, and exhausting to stacks SV19.

Under NSPS, Subpart IIII, the emergency fire pump, EU66, is considered to be an affected facility.

### Insignificant Activities

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

- (a) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (b) Forced and induced draft cooling tower system not regulated under a NESHAP.
- (c) Replacement or repair of bags in baghouses and filters in other air filtration equipment.
- (d) Paved roads and parking lots with limited public access. [326 IAC 6-4]
- (e) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (f) Other emission units, not regulated by a NESHAP, with PM<sub>10</sub>, NO<sub>x</sub>, and SO<sub>2</sub> 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) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.

- (2) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
- (3) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 424,188 gallons of 200-proof ethanol.
- (4) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 264,383 gallons of natural gasoline. [326 IAC 8-4-3]
- (5) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.
- (6) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 2,274,872 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 are considered to be new volatile organic liquid storage tanks.

### **Existing Approvals**

No air approvals have been issued to this source.

### **Enforcement Issue**

There are no enforcement actions pending.

### **Recommendation**

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

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

An administratively complete FESOP application for the purposes of this review was received on February 8, 2007.

### **Emission Calculations**

See Appendix A of this document for detailed emission calculations (pages 1 through 18). The PTE for the storage tanks is 1.77 tons per year (tons/yr) of VOC, which was calculated using EPA TANKS 4.0 software.

### **Potential to Emit**

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

Pollutant	Potential to Emit (tons/yr)
PM	Greater than 100
PM-10	Greater than 100
SO <sub>2</sub>	Less than 100
VOC	Greater than 100
CO	Greater than 100
NO <sub>x</sub>	Greater than 100

HAPs	Potential to Emit (tons/yr)
Acetaldehyde	Greater than 10
Acrolein	Less than 10
Formaldehyde	Less than 10
Methanol	Greater than 10
All Other HAPs	Less than 10
Total HAPs	Greater than 25

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, VOC, CO, and NOx are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its HAP emissions below the Title V levels.
- (c) Fugitive Emissions  
 Since this type of operation is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD applicability.

**Potential to Emit After Issuance**

The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/Emission Unit	Potential To Emit (tons/year)						
	PM	PM10	SO <sub>2</sub>	NOx	VOC	CO	HAPs
Grain Receiving and Handling	10.59	10.59	-	-	-	-	-
Grain Receiving - Fugitive	2.27	0.53	-	-	-	-	-
Fermentation	-	-	-	-	37.5	-	5.31
RTO Stacks	38.0	38.0	61.3	52.6	34.4	62.1	7.58
Boilers	3.24	8.10	8.10	38.9	3.2	29.2	3.00
DDGS Handling and Loadout	0.90	0.90	-	-	-	-	-
DDGS Loadout - Fugitive	1.60	0.54	-	-	-	-	-
Wet Cake Storage*	-	-	-	-	See Note	-	See Note

Process/Emission Unit	Potential To Emit (tons/year)						
	PM	PM10	SO <sub>2</sub>	NOx	VOC	CO	HAPs
Ethanol Loading Racks	-	-	-	-	3.35	-	0.18
Ethanol Loadout Flare **	0.02	0.02	0.00024	2.04	**	5.04	**
Paved Roads (Fugitive)	33.0	6.41	-	-	-	-	-
Unpaved Roads (Fugitive)	0.24	0.07					
Cooling Tower	7.68	7.68	-	-	-	-	-
Emergency Generators	0.13	0.08	0.08	2.84	0.13	1.03	Negligible
Emergency Fire Pump	0.03	0.03	0.03	0.45	0.04	0.10	Negligible
Insignificant Space Heaters	0.02	0.08	0.01	1.12	0.06	0.94	
Storage Tanks	-	-	-	-	1.77	-	0.23
Equipment Leaks	-	-	-	-	7.09	-	0.42
Other Insignificant Activities	1.00	1.00	-	-	1.00	-	-
<b>Total Emissions</b>	<b>98.7</b>	<b>74.1</b>	<b>69.5</b>	<b>97.9</b>	<b>88.6</b>	<b>98.4</b>	<b>16.7</b>

Note: "-" pollutant not emitted by the facility.

\* This plant is capable of producing both DDGS and WDGS. The emissions from DDGS production is the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.

\*\* VOC and HAP emissions from Ethanol Loadout are included in the total for the ethanol loading racks.

### County Attainment Status

The source is located in Vermillion County.

Pollutant	Status
PM10	Maintenance
PM2.5	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Vermillion County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.
- (b) Volatile organic compounds (VOC) and nitrogen oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Vermillion County has been designated as attainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to Prevention of Significant Deterioration (PSD). See the State Rule Applicability – Entire Source section.

- (c) Vermillion County has been classified as attainment or unclassifiable in Indiana for all remaining pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

### Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	98.7
PM10	74.1
SO <sub>2</sub>	69.5
VOC	88.6
CO	98.4
NO <sub>x</sub>	97.9
Single HAP	Less than 10
Combination HAPs	Less than 25

This new source is not a PSD major stationary source because no regulated pollutant is emitted at a rate of one hundred (100) tons per year or greater, and it is in one of the twenty-eight (28) listed source categories.

### Federal Rule Applicability

- (a) This source does not have a grain elevator with a permanent storage capacity greater than 2.5 million bushels. Therefore, the requirements of the New Source Performance Standards for Grain Elevators (326 IAC 12, 40 CFR 60.300-304, Subpart DD) are not included in this permit.
- (b) The two (2) boilers, identified as boilers EU63 and EU64, are used to produce steam and each of them has a maximum heat input capacity greater than 100 MMBtu/hr and will be constructed after June 19, 1984. Therefore, they are both subject to the New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40b-49b, Subpart Db).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed boilers EU63 and EU64 are subject to the following portions of 40 CFR 60, Subpart Db.

- (1) 40 CFR 60.40b(a),(j)
- (2) 40 CFR 60.41b
- (3) 40 CFR 60.44b(a), (h) and (i)
- (4) 40 CFR 60.46b(a)
- (5) 40 CFR 60.46b(c)
- (6) 40 CFR 60.46b(e)(1)
- (7) 40 CFR 60.48b(b)
- (8) 40 CFR 60.48b(b)(1)
- (9) 40 CFR 60.48b(c)
- (10) 40 CFR 60.48b(d)
- (11) 40 CFR 60.48b(e)(2)
- (12) 40 CFR 60.48b(f)
- (13) 40 CFR 60.48b(g)
- (14) 40 CFR 60.49(a)(1) and (3)
- (15) 40 CFR 60.49b(b)
- (16) 40 CFR 60.49b(c)
- (17) 40 CFR 60.49b(d)
- (18) 40 CFR 60.49b(g)(1-10)
- (19) 40 CFR 60.49b(i)

- (20) 40 CFR 60.49b(v)
- (21) 40 CFR 60.49b(w)

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the boilers EU63 and EU64, except when otherwise specified in 40 CFR 60, Subpart Db.

- (c) Tanks TK001 through TK005 have capacities greater than 75 cubic meters (19,813 gallons) and will be used to store volatile organic liquids. Therefore, these tanks are subject to the New Source Performance Standards for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after July 23, 1984 (326 IAC 12, 40 CFR 60.110b - 117b, Subpart Kb).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed storage tanks (TK001 through TK005) are subject to the following portions of 40 CFR 60, Subpart Kb.

- (1) 40 CFR 60.110b(a)
- (2) 40 CFR 60.111b
- (3) 40 CFR 60.112b(a)(1)
- (4) 40 CFR 60.113b(a)
- (5) 40 CFR 60.115b(a)
- (6) 40 CFR 60.116b(a-e)
- (7) 40 CFR 60.117b

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the storage tanks TK001 through TK005, except when otherwise specified in 40 CFR 60, Subpart Kb.

- (d) Ethanol is one of the chemicals listed in 40 CFR 60.489. Therefore, this ethanol production plant is subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (326 IAC 12, 40 CFR 60.480 - 489, Subpart VV).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed ethanol production plant is subject to the following portions of 40 CFR 60, Subpart VV.

- (1) 40 CFR 60.480
- (2) 40 CFR 60.481
- (3) 40 CFR 60.482-1
- (4) 40 CFR 60.482-2
- (5) 40 CFR 60.482-3
- (6) 40 CFR 60.482-4
- (7) 40 CFR 60.482-5
- (8) 40 CFR 60.482-6
- (9) 40 CFR 60.482-7
- (10) 40 CFR 60.482-8
- (11) 40 CFR 60.482-9
- (12) 40 CFR 60.482-10
- (13) 40 CFR 60.483-1
- (14) 40 CFR 60.483-2
- (15) 40 CFR 60.485
- (16) 40 CFR 60.486
- (17) 40 CFR 60.487

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to this source, except when otherwise specified in 40 CFR 60, Subpart VV.

- (e) The emergency generator, identified as EU65, and emergency fire pump, identified as EU66, will commence construction after July 11, 2005 and will be manufactured after April 1, 2006. Therefore, the emergency generator (identified as EU65) and emergency fire pump, (identified as EU66) are subject to the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (326 IAC 12, 40 CFR 60.4200 - 4209, Subpart IIII).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed emergency generator EU65 and emergency fire pump, identified as EU66, are subject to the following portions of 40 CFR 60, Subpart IIII:

- (1) 40 CFR 60.4200(a)(2)
- (2) 40 CFR 60.4200(a)(3)
- (3) 40 CFR 60.4205(a)
- (4) 40 CFR 60.4205(c)
- (5) 40 CFR 60.4206
- (6) 40 CFR 60.4207(a)
- (7) 40 CFR 60.4207(b)
- (8) 40 CFR 60.4207(c)
- (9) 40 CFR 60.4208
- (10) 40 CFR 60.4209(a)
- (11) 40 CFR 60.4211(a)
- (12) 40 CFR 60.4211(b)
- (13) 40 CFR 60.4211(e)
- (14) 40 CFR 60.4212
- (15) 40 CFR 60.4214(b)
- (16) 40 CFR 60.4218
- (17) 40 CFR 60.4219
- (18) Tables 1, 3, 4, 5, and 8

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to this source, except when otherwise specified in 40 CFR 60, Subpart IIII.

- (f) Ethanol is one of the chemicals listed in 40 CFR 60.667. However, according to the EPA memorandum from Mr. George T. Czerniak dated December 6, 2002, the manufacture of ethanol using a fermentation process (biological synthesis) was excluded from the scope of NSPS, Subpart NNN. Therefore, the distillation unit at this new ethanol production plant is not subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels VOC Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (326 IAC 12, 40 CFR 60.660 - 667, Subpart NNN).
- (g) 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.
- (h) This source will limit HAP emissions from the entire source to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) are not included in this permit.
- (i) The requirements of 40 CFR Part 63, Subpart F (National Emission Standards for Organic Hazardous Air Pollutants From Synthetic Organic Chemical Manufacturing Industry), 40 CFR Part 63, Subpart G (National Emission Standards for Organic Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater), and 40 CFR Part 63, Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks), are not included in this permit because (1) this source has

accepted limits that make it a minor source of hazardous air pollutants; (2) the source does not manufacture as a primary product any of the chemicals listed in Table 1 of 40 CFR 63, Subpart F, Tetrahydro-benzaldehyde, or Crotonaldehyde; and (3) the source does not use as a reactant, manufacture as a product or co-product any of the chemicals listed in Table 2 of 40 CFR 63, Subpart F.

- (j) The requirements of 40 CFR 63, Subpart I – National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks are not included in this permit. The source does not operate any of the processes specified in 40 CFR 63.190(b).
- (k) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements for the NESHAP for Industrial Process Cooling Towers (40 CFR 63, Subpart Q) are not included in this permit.
- (l) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Organic Liquids Distribution (non-gasoline) (40 CFR 63, Subpart EEEE) are not included in this permit.
- (m) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Miscellaneous Organic Chemical Manufacturing (40 CFR 63, Subpart FFFF) are not included in this permit.
- (n) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD) are not included in this permit.

**State Rule Applicability – Entire Source**

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

The source will be approved for construction in 2007. The source is in one of the twenty-eight (28) source categories as defined in 326 IAC 2-2-1 and the potential to emit PM, PM10, VOC, CO, and NOx from the entire source before control is greater than one hundred (100) tons/yr.

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

- (a) The PM emissions from the grain receiving, handling, and DDGS load-out operations shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Control Device ID	PM Emission Limit (lbs/hr)
EU01, EU02, EU03, EU04	Grain Receiving Pit	CE01	0.77
EU05, EU06, EU07	Grain Handling	CE02	0.77
EU08, EU09	Corn Storage Silo #1	CE03	0.09
EU10, EU11	Corn Storage Silo #2	CE04	0.09
EU67, EU68	Corn Storage Silo #3	CE19	0.09
EU12, EU13	Corn Scalper, Hammermill Baghouse #1	CE05	0.15
EU14	Hammermill Baghouse #2	CE06	0.15
EU15	Hammermill Baghouse #3	CE07	0.15
EU16	Hammermill Baghouse #4	CE08	0.15
EU50, EU51, EU52	DDGS Silos	CE11	0.05
EU53	DDGS Truck Loadout #1	CE12	0.05
EU69	DDGS Truck Loadout #2	CE20	0.05
EU54	DDGS Rail Loadout	CE13	0.05

This is equivalent to 11.5 tons/yr of PM. The source will use baghouses and bin vent filters to ensure compliance with these limits. With baghouse and bin vent filter control, the source is capable of complying with these limits.

- (b) The total grain received by straight trucks shall not exceed 25,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The total grain received by hopper trucks shall not exceed 1,166,045 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (d) The total DDGS loadout shall not exceed 373,212 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (e) The PM emissions from the thermal oxidizer stacks (SV13 and SV14), which is used to control emissions from the DDGS Dryers, coolers, and the distillation process, shall not exceed 4.34 lbs/hr each. This is equivalent to 38.0 tons/yr of PM emissions.
- (f) The Permittee shall use periodic sweeping to control PM emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

Combined with the PM emissions from the boilers, cooling tower, emergency generators, grain receiving/loadout fugitives, DDGS loadout fugitives, unpaved roads, ethanol loadout, and other insignificant activities at this source, the PM emissions from the entire source are limited to less than one hundred (100) tons/yr.

The source also accepted limits on the throughput and on the emission rates of PM10, VOC, CO, and NOx, which limit emissions of all regulated pollutants from the entire source to less than one hundred (100) tons/yr (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-2 are not applicable.

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

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

- (a) The PM10 emissions from the grain receiving, handling, and DDGS handling and loadout operations shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Control Device ID	PM10 Emission Limit (lbs/hr)
EU01, EU02, EU03, EU04	Grain Receiving Pit	CE01	0.77
EU05, EU06, EU07	Grain Handling	CE02	0.77
EU08, EU09	Corn Storage Silo #1	CE03	0.09
EU10, EU11	Corn Storage Silo #2	CE04	0.09
EU67, EU68	Corn Storage Silo #3	CE19	0.09
EU12, EU13	Corn Scalper, Hammermill Baghouse #1	CE05	0.15
EU14	Hammermill Baghouse #2	CE06	0.15
EU15	Hammermill Baghouse #3	CE07	0.15
EU16	Hammermill Baghouse #4	CE08	0.15

Unit ID	Unit Description	Control Device ID	PM10 Emission Limit (lbs/hr)
EU50, EU51, EU52	DDGS Silos	CE11	0.05
EU53	DDGS Truck Loadout #1	CE12	0.05
EU69	DDGS Truck Loadout #2	CE20	0.05
EU54	DDGS Rail Loadout	CE13	0.05

This is equivalent to 11.5 tons/yr of PM10. The source will use baghouses and bin vent filters to ensure compliance with these limits. With baghouse and bin vent filter control, the source is capable of complying with these limits.

- (b) The total grain received by straight trucks shall not exceed 25,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The total grain received by hopper trucks shall not exceed 1,166,045 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (d) The total DDGS loadout shall not exceed 373,212 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (e) The Permittee shall use periodic sweeping to control PM10 emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-8.
- (f) The Permittee shall comply with the following requirements for the fermentation scrubber:
  - (1) The VOC emissions from the scrubber shall not exceed 8.56 lbs/hr.
  - (2) Total HAP emissions shall not exceed 1.21 lbs/hr, and Acetaldehyde emissions shall not exceed 1.14 lbs/hr.
- (g) The emissions from thermal oxidizer stacks (SV13 and SV14), which are used to control emissions from the DDGS Dryers, coolers, and the distillation process, shall not exceed the following:
  - (1) PM/PM10 emissions shall not exceed 4.34 lbs/hr each. This is equivalent to 38.0 tons/yr of PM/PM10.
  - (2) VOC emissions shall not exceed 3.93 lbs/hr each. This is equivalent to 34.4 tons/yr of VOC.
  - (3) CO emissions shall not exceed 7.09 lbs/hr each. This is equivalent to 62.2 tons/yr of CO.
  - (4) NOx emissions shall not exceed 6.00 lbs/hr each. This is equivalent to 52.6 tons/yr of NOx.
  - (5) SO<sub>2</sub> emissions shall not exceed 7.00 lbs/hr each. This is equivalent to 61.3 tons/yr of SO<sub>2</sub>.
  - (6) Total HAP emissions shall not exceed 1.73 lbs/hr total for both stacks. This is equivalent to 7.58 tons/yr. Acetaldehyde emissions shall not exceed 0.66 lbs/hr total for both stacks, which is equivalent to 2.89 tons/yr.
- (h) The Permittee shall comply with the following requirements for the ethanol loading racks (EU61 and EU62):

- (1) The total denatured ethanol load-out rate for ethanol loading racks EU61 and EU62 shall not exceed 120,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (2) The total denatured ethanol load-out rate for the ethanol loading rack for trucks, identified as EU61, shall not exceed 60,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (3) The Permittee shall use enclosed flare CE18 to control the emissions from the loading racks when loading denatured ethanol to trucks or railcars.
- (4) CO emissions from flare CE18 shall not exceed 0.084 lbs/kgal.
- (5) NOx emissions from flare CE18 shall not exceed 0.0334 lbs/kgal.
- (6) PM emissions from flare CE18 shall not exceed 0.0003 lbs/kgal.
- (7) VOC emissions from Flare CE18 shall not exceed 0.102 lbs/kgal when controlling emissions from truck loading rack EU61.
- (8) VOC emissions from Flare CE18 shall not exceed 0.0098 lbs/kgal when controlling emissions from rail loading rack EU62.
- (9) The ethanol loading racks (EU61 and EU62) shall utilize submerged loading methods.
- (10) The railcars and trucks shall not use vapor balance services during ethanol loading.
- (i) The Permittee shall comply with the following requirements for the boilers, identified as EU63 and EU64:
  - (1) NOx emissions shall not exceed 8.88 pounds per hour total.
  - (2) CO emissions shall not exceed 6.66 pounds per hour total.
  - (3) PM emissions shall not exceed 0.74 pounds per hour total.
  - (4) PM10 emissions shall not exceed 1.85 pounds per hour total.
  - (5) SO<sub>2</sub> emissions shall not exceed 1.85 pounds per hour total.
- (j) The operating hours for the emergency generator, identified as EU65, shall not exceed 100 hours per twelve (12) consecutive month period with compliance determined at the end of each month.
- (k) The operating hours for the emergency fire pump, identified as EU66, shall not exceed 100 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

Combined with the PM10, VOC, CO, NOx, SO<sub>2</sub>, and HAP emission units, the emissions from the entire source are limited to less than one hundred (100) tons/yr for PM10, VOC, CO and NOx, SO<sub>2</sub>, and less than ten (10) tons/yr for a single HAP and less than twenty-five (25) tons/yr total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

#### 326 IAC 2-6 (Emission Reporting)

This source is located in Vermillion County, is not required to operate under a Part 70 permit, and emits less than 5 tons per year of lead. Therefore, the source is only subject to the requirements of 326 IAC 2-6-5 (Additional Information Requests).

**326 IAC 5-1 (Opacity Limitations)**

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

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

**326 IAC 6-4 (Fugitive Dust Emissions)**

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

**326 IAC 6-5 (Fugitive Particulate Emissions Limitations)**

The potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the source are greater than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are applicable to this source. Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on March 8, 2007. The plan is included as Attachment A of the permit.

**State Rule Applicability - Grain Receiving and Handling Operations**

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

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU01, EU02, EU03	Grain Receiving Pit	980	77.3
EU04	Associated Conveyors	4,200	97.7
EU05, EU06, EU07	Grain Handling	4,200	97.7
EU08, EU09	Corn Storage Silo #1	4,200	97.7
EU10, EU11	Corn Storage Silo #2	4,200	97.7
EU67, EU68	Corn Storage Silo #3	4,200	97.7
EU12	Corn Scalper	840	75.4
EU13	Hammermill Baghouse #1	42	43.0
EU14	Hammermill Baghouse #2	42	43.0
EU15	Hammermill Baghouse #3	42	43.0
EU16	Hammermill Baghouse #4	42	43.0

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:

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

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

According to the emission calculations (see Appendix A), the potential to emit PM after control from these grain receiving and handling operations is less than the emission limits above.

Therefore, these operations can comply with 326 IAC 6-3-2 using the grain receiving and handling baghouses CE01, CE02, C06, bin vent filters CE03, CE04, and CE19, and the hammermill baghouses CE05, CE06, CE07, and CE08.

**State Rule Applicability – Boilers**

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

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

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

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

The total source heat input capacity is 185 + 185 = 370 MMBtu/hr. Therefore, the PM emission limit for each of the boilers identified as EU53, EU54, EU55, and EU56 is calculated as follows:

$$Pt = \frac{1.09}{370^{0.26}} = 0.234 \text{ lbs/MMBtu.}$$

A PM emission limit of 0.234 lbs/MMBtu is equivalent to 43.3 lbs/hr (0.234 lbs/MMBtu x 185 MMBtu/hr = 43.3 lbs/hr) of PM emissions from each of the boilers identified as EU63 and EU64. According to the emission calculations in Appendix A, the total PM emissions from EU63 and EU64 is 0.74 lbs/hr. Therefore, the boilers are capable of complying with the PM requirements in 326 IAC 6-2-4.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The boilers have a potential to emit SO<sub>2</sub> that is less than 10 lbs per hour and 25 tons per year. Therefore, the boilers are not subject to 326 IAC 7-1.1-1.

**State Rule Applicability – Fermentation and Distillation Process, DDGS dryers, DDGS coolers, and ethanol loadout**

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 (EU55 and EU58), the DDGS coolers (EU56 and EU59), and the DDGS loadout operations (EU53, EU69, and EU54) shall not exceed the pound per hour limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU55	DDGS Dryer #1	50	44.6
EU56	DDGS Cooler #1	50	44.6
EU58	DDGS Dryer #2	50	44.6
EU59	DDGS Cooler #2	50	44.6
EU53	DDGS Truck Loadout #1	55	45.5
EU69	DDGS Truck Loadout #2	55	45.5
EU54	DDGS Rail Loadout	100	51.3

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:

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

$$P = \text{process weight rate in tons per hour}$$

According to the emission calculations (see Appendix A), the potential to emit PM after control from these DDGS drying, cooling, handling, and loadout operations is less than the emission limits above. Therefore, these operations can comply with 326 IAC 6-3-2 using the thermal

oxidizer system (CE15 and CE17), and the DDGS storage and handling baghouses (CE11, CE12, CE13, and CE20).

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

The fermentation process, distillation process, DDGS dryers, and ethanol load-out operation located at this source are subject to the requirements in 326 IAC 8-5-6. Therefore, these operations are not subject to the requirements of 326 IAC 8-1-6 (BACT).

326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills)

The proposed ethanol production plant will be constructed after April 1, 2007, will use dry mill operations, and have combined potential VOC emissions from the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation at this source are subject to the requirements in 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills) and shall comply with the following:

- (a) Pursuant to 326 IAC 8-5-6(c), the Permittee has chosen to control the VOC emissions from the fermentation process with a wet scrubber, the distillation process with a wet scrubber and two thermal oxidizers, the DDGS dryers by two thermal oxidizers, and the ethanol load-out operations by an enclosed flare. Therefore, the following conditions apply:
- (1) The VOC emissions from the fermentation process shall be controlled by scrubber CE10.
  - (2) The overall efficiency for the scrubber CE10 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.
  - (3) The VOC emissions from the distillation process shall be controlled by scrubber CE09 followed by one of two (2) recuperative thermal oxidizers, identified as CE15 and CE17.
  - (4) The overall efficiency (including the capture efficiency and destruction efficiency) for scrubber CE09 and the two (2) recuperative thermal oxidizers, identified as CE15 and CE17, controlling the distillation process shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.
  - (5) The VOC emissions from the DDGS dryers (EU55 and EU58) shall be controlled by one of two (2) recuperative thermal oxidizers, identified as CE15 and CE17.
  - (6) The overall efficiency (including the capture efficiency and destruction efficiency) for each of the two (2) recuperative thermal oxidizers, identified as CE15 and CE17, controlling the DDGS dryers shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.
  - (7) The VOC emissions from the ethanol loading racks (EU61 and EU62) shall be collected and controlled by enclosed flare CE18.
  - (8) The overall control efficiency for the vapor collection system and enclosed flare CE18 (including the capture efficiency and destruction efficiency) shall be at least 98%.
- (b) Pursuant to 326 IAC 8-5-6(d), the Permittee shall determine initial compliance with the control efficiency requirements within sixty (60) days after achieving maximum production levels but no later than one hundred and eighty (180) days after startup.
- (c) Pursuant to 326 IAC 8-5-6(e), the Permittee shall ensure and verify initial and continuing compliance with the control efficiency requirements by doing the following:

- (1) The Permittee shall meet the following requirements for the scrubbers CE10 and CE09:
  - (A) The pressure drop across the scrubber must be within the normal range established during the latest stack test. The pressure drop of the scrubber must be monitored at least once per day when the associated emission unit is in operation to ensure that the pressure drop across the scrubber is within the normal range established during the latest stack test.
  - (B) The scrubber flow rate must be greater than the minimum flow rate for the scrubber during normal operation. The scrubber flow rate must be monitored at least once per day when the associated emission unit is in operation to ensure that the flow rate of the scrubber is greater than the minimum flow rate established during the latest stack test.
  - (C) Maintain daily records of pressure drop and flow rate for the scrubber during normal operation.
- (2) The Permittee shall meet the following requirements for the two (2) recuperative thermal oxidizers, identified as CE15 and CE17:
  - (A) The three (3) hour average operating temperature of the oxidizer, as measured by a continuous temperature monitor, must be greater than or equal to the minimum operating temperature established during the most recent compliance demonstration.
  - (B) Maintain continuous temperature records for the thermal oxidizer and the three (3) hour average operating temperature used to demonstrate compliance during the most recent compliant stack test.
  - (C) The three (3) hour average duct pressure or fan amperage, as measured by a continuous parameter monitoring system, must be within the normal range established during the most recent compliance demonstration.
  - (D) Maintain daily records of the duct pressure or fan amperage for the thermal oxidizer.
- (3) The Permittee shall meet the following requirements for the enclosed flare CE18:
  - (A) Maintain a flare pilot flame when the associated emission unit is in operation and continuously 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 associated emission unit is in operation.
  - (B) Maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading rack is in operation.

**State Rule Applicability - Cooling Tower (Insignificant Activity)**

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

Pursuant to 326 IAC 6-3-1(b)(11), particulate emissions from the noncontact cooling tower systems are exempt from the requirements of 326 IAC 6-3.

### **State Rule Applicability – Emergency Generator (Insignificant Activity)**

#### 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The emergency generator has a potential to emit SO<sub>2</sub> that is less than 10 lbs per hour and less than 25 tons per year. Therefore, the emergency generator is not subject to 326 IAC 7-1.1-1.

#### 326 IAC 9-1-2 (Carbon Monoxide Emission Requirements)

This source is not among the listed source categories in 326 IAC 9-1-2. Therefore, the emergency generator (EU65) is not subject to the requirements of 326 IAC 9-1-2.

#### 326 IAC 10-1 (Nitrogen Oxide Emission Requirements)

This source is not located in Clark or Floyd County. Therefore, the emergency generator (EU65) is not subject to the requirements of 326 IAC 10-1.

### **State Rule Applicability – Emergency Fire Pump (Insignificant Activity)**

#### 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The emergency fire pump has a potential to emit SO<sub>2</sub> that is less than 10 lbs per hour and less than 25 tons per year. Therefore, the emergency fire pump is not subject to 326 IAC 7-1.1-1.

#### 326 IAC 9-1-2 (Carbon Monoxide Emission Requirements)

This source is not among the listed source categories in 326 IAC 9-1-2. Therefore, the emergency fire pump (EU66) is not subject to the requirements of 326 IAC 9-1-2.

#### 326 IAC 10-1 (Nitrogen Oxide Emission Requirements)

This source is not located in Clark or Floyd County. Therefore, the emergency fire pump (EU66) is not subject to the requirements of 326 IAC 10-1.

### **State Rule Applicability – Storage Tanks TK001 through TK005 (Insignificant Activities)**

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

The denaturant storage tank (TK003) has a maximum capacity greater than 39,000 gallons and will be used to store gasoline, which has a vapor pressure greater than 1.52 psi. Therefore, tank TK003 is subject to the requirements of 326 IAC 8-4-3. Tank TK003 will be equipped with an internal floating roof.

- (a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank TK003 shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.
- (b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, shall be equipped with covers, lids, or seals such that:
  - (1) The cover, lid or seal shall be in the closed position at all times except when in actual use;
  - (2) Automatic bleeder vents shall be closed at all times except when the roof is floated off or landed on the roof leg supports;
  - (3) Rim vents, if provided, shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.
- (c) Pursuant to 326 IAC 8-4-3(d), the Permittee shall maintain the following records for a period of two (2) years for tank TK003:
  - (1) The types of volatile petroleum liquid stored;
  - (2) The maximum true vapor pressure of the liquids as stored; and

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

The above records shall be made available to the IDEM, OAQ upon written request. Tanks TK001, TK002, TK004, and TK005 will not be used to store petroleum. Therefore, these tanks are not subject to requirements of 326 IAC 8-4-3.

#### 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

The source is not located in Clark, Floyd, Lake, or Porter County. Therefore, the requirements of 326 IAC 8-9-1 are not applicable to the tanks at this source.

### Testing Requirements

In order to demonstrate compliance with the FESOP and PSD minor limits, 40 CFR 60, Subpart Db and 326 IAC 8-5-6(d), the Permittee shall perform the following tests within 60 days after achieving the maximum capacity but not later than 180 days after initial startup of the ethanol production plant:

- (a) PM and PM10 tests for baghouses CE01, CE02, CE05, CE06, CE07, CE08, CE11, CE12, CE13, and CE20 which are used to control the particulate emissions from the three (3) grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2), and EU03 (Grain Rail Dump Pit/Auger #1), the grain receiving and handling equipment, identified as EU04 (Associated Conveyors), the grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), the one (1) corn scalper and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, the three (3) DDGS silos, identified as EU50, EU51 and EU52, the two (2) DDGS truck loadout spouts, identified as EU53 and EU69, and the one (1) DDGS rail loadout spout, identified as EU54.
- (b) PM and PM10 tests for bin vent filters CE03, CE04, and CE19 which are used to control the particulate emissions from the three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68.
- (c) VOC and acetaldehyde tests for the fermentation scrubber system stack (CE10). The fermentation scrubber (CE10) is used to control the emissions from the fermentation operations.
- (d) PM, PM10, VOC, NO<sub>x</sub>, CO, SO<sub>2</sub>, and HAP tests for the thermal oxidizer system stacks (SV13 and SV14). The thermal oxidizer system (CE15 and CE17) is used to control the emissions from the distillation process and the DDGS dryers and coolers (EU55, EU56, EU58, and EU59).
- (e) VOC tests for the ethanol loading rack flare (CE18).
- (f) PM, PM10, NO<sub>x</sub>, VOC, SO<sub>2</sub>, and CO tests for the boilers.

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

### Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

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

1. The grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2), and EU03 (Grain Rail Dump Pit/Auger #1), the grain receiving and handling equipment, identified as EU04 (Associated Conveyors), the grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), the one (1) corn scalper and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, the three (3) DDGS silos, identified as EU50, EU51 and EU52, the two (2) DDGS truck loadout spouts, identified as EU53 and EU69, and the one (1) DDGS rail loadout spout, identified as EU54, and the three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68 have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses CE01, CE02, CE05, CE06, CE07, CE08, CE11, CE12, CE13, and CE20, and bin vent filters CE03, CE04, and CE19.

#### Visible Emissions Notations

- (a) Visible emission notations of the baghouse stack exhausts (stacks SV01, SV02, SV05, SV06, SV07, and SV08) and bin vent filter exhausts (stacks SV03, SV04, and SV20) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee or contractor is a person who has worked or trained at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

#### Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the three (3) grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2), and EU03 (Grain Rail Dump Pit/Auger #1), the grain receiving and handling equipment, identified as EU04 (Associated Conveyors), the grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), the one (1) corn scalper and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, the three (3) DDGS silos,

identified as EU50, EU51 and EU52, the two (2) DDGS truck loadout spouts, identified as EU53 and EU69, and the one (1) DDGS rail loadout spout, identified as EU54 and the bin vent filters used in conjunction with the the three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68 at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

- (b) The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated at least once every six (6) months.
- (c) In the event that bag failure has been observed:
  - (1) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
  - (2) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

These monitoring conditions are necessary because the baghouses controlling the three (3) grain receiving pits, identified as EU01 (Grain Truck Dump Pit/Auger #1), EU02 (Grain Truck Dump Pit/Auger #2), and EU03 (Grain Rail Dump Pit/Auger #1), the grain receiving and handling equipment, identified as EU04 (Associated Conveyors), the grain receiving and handling equipment, identified as EU05 (Grain Bulkweigher), EU06 (Grain Elevator), and EU07 (Associated Conveyors), the one (1) corn scalper and four (4) hammermills, identified as EU12, EU13, EU14, EU15 and EU16, the three (3) DDGS silos, identified as EU50, EU51 and EU52, the two (2) DDGS truck loadout spouts, identified as EU53 and EU69, and the one (1) DDGS rail loadout spout, identified as EU54 and the bin vent filters used in conjunction with the the three (3) transfer conveyor and corn storage silos, identified as EU08 and EU09, EU10 and EU11, and EU67 and EU68 must operate properly to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8 (FESOP), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

- 2. The fermentation process, which is controlled by scrubber CE10, has applicable compliance monitoring conditions as specified below:

#### Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from the scrubber stack (SV09) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

#### Parametric Monitoring

- (a) The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber CE10 at least once per day when the fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 2.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 35 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.
- (b) The instruments used for determining the pressure drop and flow rate shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.
- (c) In the event that a scrubber malfunction has been observed:  
  
Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

These monitoring conditions are necessary because the scrubber CE10 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 distillation process, which is controlled by scrubber CE09 and thermal oxidizers CE15 and CE17, and the DDGS dryers (EU55 and EU58) and DDGS coolers (EU56 and

EU59), which are controlled by thermal oxidizers CE15 and CE17, have applicable compliance monitoring conditions as specified below:

Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from the thermal oxidizer system stacks (SV13 and SV14) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Parametric Monitoring

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer system (CE15 and CE17) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature of 1,400°F.
- (b) 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.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test.
- (d) The Permittee shall determine fan amperage or duct pressure from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM, OAQ.
- (e) 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.
- (f) The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber CE09 at least once per day when the distillation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 2.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in

accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 35 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

(h) In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit

These monitoring conditions are necessary because the scrubber (CE09) and thermal oxidizers (CE15 and CE17) must operate properly at all times the distillation process, the DDGS dryers (EU55 and EU58), and the DDGS coolers (EU56 and EU59) are in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 8-5-6 (Fuel grade ethanol production at dry mills), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

## **Conclusion**

The construction and operation of this ethanol production plant shall be subject to the conditions of the FESOP 165-24268-00082.

**Appendix A: Emission Calculations  
PM and PM<sub>10</sub> Emissions  
From Grain Receiving and Handling Operations**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Potential to Emit PM/PM<sub>10</sub> - Controlled Emissions:**

Control Equipment ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM <sub>10</sub> after Control* (lb/hr)	PTE of PM/PM <sub>10</sub> after Control* (ton/yr)	Control Efficiency (%)	PTE of PM/PM <sub>10</sub> before Control (ton/yr)
CE01	Grain Receiving #1	Baghouse	0.003	30,000	0.77	3.38	99%	338
CE02	Grain Receiving #2	Baghouse	0.003	30,000	0.77	3.38	99%	338
CE03	Corn Storage Bin #1	Vent Filter	0.010	1,000	0.09	0.38	99%	38
CE04	Corn Storage Bin #2	Vent Filter	0.010	1,000	0.09	0.38	99%	38
CE19	Corn Storage Bin #3	Vent Filter	0.010	1,000	0.09	0.38	99%	38
CE05	Hammermill Baghouse #1	Baghouse	0.003	6,000	0.15	0.68	99%	68
CE06	Hammermill Baghouse #2	Baghouse	0.003	6,000	0.15	0.68	99%	68
CE07	Hammermill Baghouse #3	Baghouse	0.003	6,000	0.15	0.68	99%	68
CE08	Hammermill Baghouse #4	Baghouse	0.003	6,000	0.15	0.68	99%	68
<b>Total</b>						<b>10.59</b>		<b>1,059</b>

\* Assume PM emissions equal PM<sub>10</sub> emissions.

Assume dry standard cubic feet (dscf) equals standard cubic feet (scf).

**Methodology**

PTE of PM/PM<sub>10</sub> after Control (lb/hr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 min/hr x 1 lb/7000 gr

PTE of PM/PM<sub>10</sub> after Control (ton/yr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 min/hr x 1 lb/7000 gr x 8760 hr/yr x 1 ton/2000 lb

PTE of PM/PM<sub>10</sub> before Control (ton/yr) = PTE of PM/PM<sub>10</sub> after Control (ton/yr) / (1 - Control Efficiency %)

**2. Potential to Emit PM/PM<sub>10</sub> - Fugitive Emissions:**

Emission Unit ID	Unit Description	Annual Throughput Limit (ton/yr)	Uncontrolled PM Emission Factor * (lb/ton)	Uncontrolled PM <sub>10</sub> Emission Factor * (lb/ton)	Capture Efficiency ** (%)	Fugitive PM Emissions (ton/yr)	Fugitive PM <sub>10</sub> Emissions (ton/yr)
FS002	Grain Receiving Straight Truck	25,000	0.180	0.059	90%	0.23	0.07
FS002	Grain Receiving Hopper Truck	1,166,045	0.035	0.0078	90%	2.04	0.45
<b>Total</b>						<b>2.27</b>	<b>0.53</b>

\* Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (04/03). Assume all the grain receiving and loadout is by truck, which is the worst case scenario.

\*\* Capture efficiency reflects that the 90% of emissions will be captured and controlled through the grain receiving baghouses, CE01 and CE02.

**Methodology**

Fugitive PM/PM<sub>10</sub> (ton/yr) = Annual Throughput Limit (ton/yr) x Uncontrolled Emission Factor (lb/ton) x (1 - Capture Efficiency %) x 1 ton/2000 lb

**Appendix A: Emission Calculations  
VOC and HAP Emissions  
From the Fermentation Process**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Process Description:**

Maximum Ethanol Throughput

(MMgal/yr)	Control Equipment ID	Control Device
114	CE10	Fermentation CO <sub>2</sub> scrubber

**2. Potential to Emit (PTE) of VOC and HAP from Fermentation:**

Pollutant	Emission Rate after Control * (lb/hr)	PTE after Control (ton/yr)
VOC	8.56	37.5
HAP		
Acetaldehyde	1.14	4.99
Acrolein	0.014	0.06
Methanol	0.030	0.13
Formaldehyde	0.030	0.13
<b>Total HAPs</b>	1.21	5.31

\* Emission factors provided by the source based on stack test results from similar facilities, scaled linearly based on production capacity. The Permittee will perform stack testing to demonstrate compliance with the above emission rates.

**Methodology**

PTE after Control (ton/yr) = Emission Rate after Control (lb/hr) x 8760 hr/yr x 1 ton/2000 lb

**Appendix A: Emission Calculations**  
**PM and PM<sub>10</sub> Emissions**  
**From DDGS Handling and Loadout Operations**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Potential to Emit PM/PM<sub>10</sub> - Controlled Emissions:**

Control Equipment ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM <sub>10</sub> after Control *	PTE of PM/PM <sub>10</sub> after Control*	Control Efficiency (%)	PTE of PM/PM <sub>10</sub> before Control (ton/yr)
CE11	DDGS Handling	Baghouse	0.003	2,000	0.05	0.23	99%	22.5
CE12	DDGS Truck Loadout #1	Baghouse	0.003	2,000	0.05	0.23	99%	22.5
CE20	DDGS Truck Loadout #2	Baghouse	0.003	2,000	0.05	0.23	99%	22.5
CE13	DDGS Rail Loadout	Baghouse	0.003	2,000	0.05	0.23	99%	22.5
<b>Total</b>					<b>0.21</b>	<b>0.90</b>		<b>90.1</b>

\* Assume PM emissions equal PM<sub>10</sub> emissions.

**Methodology**

PTE of PM/PM<sub>10</sub> after Control (lb/hr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 min/hr x 1 lb/7000 gr

PTE of PM/PM<sub>10</sub> after Control (ton/yr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 min/hr x 1 lb/7000 gr x 8760 hr/yr x 1 ton/2000 lb

PTE of PM/PM<sub>10</sub> before Control (ton/yr) = PTE of PM/PM<sub>10</sub> after Control (ton/yr) / (1-Control Efficiency %)

**2. Potential to Emit PM/PM<sub>10</sub> - Fugitive Emissions:**

Unit ID	Unit Description	Annual Throughput Limit (ton/yr)	Uncontrolled PM Emission Factor * (lb/ton)	Uncontrolled PM <sub>10</sub> Emission Factor * (lb/ton)	Capture Efficiency ** (%)	Fugitive PM Emissions (ton/yr)	Fugitive PM <sub>10</sub> Emissions (ton/yr)
FS003/FS004	DDGS Storage and Loadout	372,212	0.0860	0.0290	90%	1.60	0.54
<b>Total</b>						<b>1.60</b>	<b>0.54</b>

\* Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03).

\*\* Capture efficiency reflects that 90% of emissions will be captured and controlled through the DDGS Handling and Loadout baghouses CE11, CE12, CE18, and CE20.

**Methodology**

Fugitive PM/PM<sub>10</sub> (ton/yr) = Annual Throughput Limit (ton/yr) x Uncontrolled Emission Factor (lb/ton) x (1 - Capture Efficiency %) x 1 ton/2000 lb

**Appendix A: Emission Calculations  
Criteria Pollutant and HAP Emissions  
From the Regenerative Thermal Oxidizer Stacks**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Process Description:**

Control Equipment ID	Control Device	Process Controlled
CE15	RTO #1	DDGS Dryers, DDGS Coolers, Distillation
CE17	RTO #2	DDGS Dryers, DDGS Coolers, Distillation

**2. Process and Combustion Emissions - Criteria Pollutants:**

Pollutant	RTO #1		RTO #2		RTO Total	
	Emission Rate after Control * (lb/hr)	PTE after Control (ton/yr)	Emission Rate after Control * (lb/hr)	PTE after Control (ton/yr)	Emission Rate after Control * (lb/hr)	PTE after Control (ton/yr)
VOC	3.93	17.2	3.93	17.2	7.86	34.43
PM/PM <sub>10</sub>	4.34	19.0	4.34	19.0	8.68	38.02
CO	7.09	31.1	7.09	31.1	14.18	62.11
SO <sub>2</sub>	7.00	30.7	7.00	30.7	14.00	61.32
NO <sub>x</sub>	6.00	26.3	6.00	26.3	12.00	52.56

\* Emission factors provided by the source based on stack test results from similar facilities, manufacturers data, and engineering calculations. The Permittee will perform stack testing to demonstrate compliance with these emission rates.

**Methodology**

PTE after Control (ton/yr) = Emission Rate after Control (lb/hr) x 8760 hr/yr x 1 ton/2000 lb  
RTO Total = Emissions from RTO #1 + Emissions from RTO #2

**3. Process Emissions - HAPs (drying and distillation):**

Pollutant	Emission Rate after Control * (lb/hr)	PTE after Control (ton/yr)
Acetaldehyde	0.66	2.89
Acrolein	0.19	0.83
Formaldehyde	0.13	0.57
Methanol	0.35	1.54
<b>Total HAPs</b>	<b>1.33</b>	<b>5.83</b>

\* Emission factors provided by the source based on stack test results from similar facilities and includes a scaling factor based on production rate.

**Methodology**

PTE after Control (ton/yr) = Emission Rate after Control (lb/hr) x 8760 hr/yr x 1 ton/2000 lb

**Appendix A: Emission Calculations  
Criteria Pollutant and HAP Emissions  
From the Regenerative Thermal Oxidizer Stacks**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**4. Combustion Emissions - HAPs (RTOs and dryers):**

Heat Input Capacity  
(MMBtu/hr)  
**216**  
(36 MMBtu/hr from RTOs, 180 MMBtu/hr from dryers)

Potential Throughput  
(MMcf/yr)  
**1855**

HAPs - Organics					
Emission Factor * (lb/MMcf)	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential to Emit (ton/yr)	1.95E-03	1.11E-03	6.96E-02	1.67E+00	3.15E-03

HAPs - Metals					
Emission Factor * (lb/MMcf)	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential to Emit (ton/yr)	4.64E-04	1.02E-03	1.30E-03	3.52E-04	1.95E-03

\* Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (AP-42 Supplement D 3/98). The five highest organic and metal HAP emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

MMcf = 10<sup>6</sup> cubic feet

**Methodology**

Potential Throughput (MMcf) = Heat Input Capacity (MMBtu/hr) x 8760 hr/yr x 1 MMcf/1020 MMBtu  
 Potential to Emit (ton/yr) = Potential Throughput (MMcf/yr) x Emission Factor (lb/MMcf) x 1 ton/2000 lb

**5. Total HAP Emissions from the RTO Stacks #1 and #2 (combined):**

Emissions Type	Total HAP PTE after Control (ton/yr)	Total HAP PTE after Control (lb/hr)
Process HAP Emissions	5.83	1.33
Combustion HAP Emissions	1.75	0.40
<b>Total</b>	<b>7.58</b>	<b>1.73</b>

**Appendix A: Emission Calculations**  
**VOC and HAP Emissions**  
**From Ethanol Loading Racks (EU61 and EU62)**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Emission Factors: AP-42**

Denatured ethanol will be shipped by either truck or railcar loading via the ethanol loading racks. Both railcars and trucks may be used to carry gasoline prior to filling with ethanol. Both railcars and trucks will be filled by submerged loading process. The ethanol loading racks will be controlled by the loadout flare (see TSD Appendix A, Page 8).

According to AP-42, Chapter 5.2 - Transportation and Marketing of Petroleum Liquids (01/95), the VOC emission factors for the truck and rail loading racks can be estimated from the following equation:

$$L = 12.46 \times (SPM)/T$$

where:

L = loading loss (lb/kgal)  
S = saturation factor (see AP-42, Table 5.2-1)  
P = true vapor pressure of the liquid loaded (psia)  
M = molecular weight of vapors (lb/lbmol)  
T = temperature of the bulk liquid loaded (degree R)

Previous Stored Liquid	*S	P (psia)	M (lb/lbmol)	T (°R)	L (lb/kgal)
Gasoline (normal)	1.0	6.2041	62	511.95	9.36
Gasoline (clean cargo)	0.5	6.2041	62	511.95	4.68
Denatured Ethanol (normal)	0.6	0.68	49.8037	511.95	0.49
Denatured Ethanol (clean cargo)	0.5	0.68	49.8037	511.95	0.41

Therefore, the emission factor for loading denatured ethanol to the trucks which stored gasoline previously  
= L (gasoline, normal) - L (gasoline, clean cargo) + L (denatured ethanol, clean cargo) = 5.09 lb/kgal

**2. Potential to Emit VOC Before Control:**

(1) Assume all ethanol loaded out via truck:

Loading rate for trucks: 120.0 MMgal/yr  
PTE of VOC before Control (ton/yr) = 120.0 MMgal/yr x 5.09 lb/kgal x 1 ton/2000 lb = **306 ton/yr**

(2) Assume all ethanol loaded out via rail:

Loading rate for rail: 120.0 MMgal/yr  
PTE of VOC before Control (ton/yr) = 120.0 MMgal/yr x 0.49 lbs/kgal x 1 ton/2000 lb = **29.7 ton/yr**

**3. Limited Potential to Emit:**

Annual Production Limit: 120,000 kgal/yr (total)  
Truck Loadout Limit: 60,000 kgal/yr  
Flare Control Efficiency: 98%

(1) Assume 60,000 kgal ethanol loaded out via truck, remainder loadout out via rail (controlled by loadout flare):

PTE of VOC from truck loading (ton/yr) = 5.09 lbs/kgal x 60,000 kgal/yr x (1-98%) x 1 ton/2000 lbs = **3.06 ton/yr**  
PTE of VOC from rail loading (ton/yr) = 0.49 lbs/kgal x 60,000 kgal/yr x (1-98%) x 1 ton/2000 lbs = **0.30**  
Total = **3.35**

(2) Assume all denatured ethanol is loaded to railcars (controlled by loadout flare):

PTE of VOC (ton/yr) = 0.49 lb/kgal x 120,000 kgal/yr x (1-98%) x 1 ton/2000 lb = **0.59 ton/yr**

**Worst case scenario is when loading 60 MMgal/yr to trucks, 60 MMgal/yr to rail = **3.35 ton/yr****

**Appendix A: Emission Calculations**  
**VOC and HAP Emissions**  
**From Ethanol Loading Racks (EU61 and EU62)**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**4. Potential to Emit HAPs:**

HAP emissions are mainly from the unloading process for trucks, which may have been used to ship gasoline previously. HAP emissions are controlled by the loadout flare (see loadout flare criteria pollutant emission calculations on Page 8).

HAP	HAP Fraction*	PTE of HAP before Control (ton/yr)	Limited PTE of HAP after Control (ton/yr)
Benzene	2.50E-03	0.76	7.64E-03
Ethyl benzene	5.00E-05	0.02	1.53E-04
Cumene	1.00E-04	0.03	3.06E-04
Xylenes	5.00E-04	0.15	1.53E-03
Toluene	5.00E-03	1.53	1.53E-02
Carbon Disulfide	2.00E-05	0.01	6.11E-05
n-Hexane	5.00E-02	15.28	1.53E-01
Acetaldehyde	2.00E-04	0.06	6.11E-04
Methanol	2.00E-04	0.06	6.11E-04
<b>Total</b>	0.06	17.9	<b>0.18</b>

\* This is the HAP fraction for gasoline vapors, except for acetaldehyde and methanol which are from ethanol vapors.

**Methodology**

PTE of HAP before Control (ton/yr) = Truck PTE of VOC before Control (ton/yr) x HAP Fraction

Limited PTE of HAP after Control (ton/yr) = Limited PTE of VOC by Trucks (ton/yr) x HAP Fraction

**Appendix A: Emission Calculations  
Criteria Pollutant Emissions  
From Ethanol Loadout Flare (CE18)**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Flare Emissions:**

Annual Production Limit  
kgal/yr

120,000
---------

Emission Factor*	Pollutant					
	PM 0.0003 (lbs/kgal)	PM10 0.0003 (lbs/kgal)	SO <sub>2</sub> NA	NO <sub>x</sub> 0.0334 (lbs/kgal)	VOC** -	CO 0.084 (lbs/kgal)
Limited Potential to Emit in tons/yr	0.02	0.02	NA	2.00	(see page 6)	5.01

\* Emission factors for PM, PM10, NO<sub>x</sub> and CO are based on the information provided by the flare manufacturer.

\*\* VOC emission calculations can be found on page 6 of this appendix.

**Methodology**

Limited PTE of PM, PM10, NO<sub>x</sub> and CO (tons/yr) = Annual Production Limit (kgal/yr) x Emission Factor (lbs/kgal) x 1 ton/2000 lbs

**2. Pilot Flame Emissions:**

Heat Input Capacity  
MMBtu/hr

0.092
-------

Potential Throughput  
(MMcf/yr)

0.79
------

Emission Factor * (lb/MMcf)	Pollutant					
	PM 1.9	PM10 7.6	SO <sub>2</sub> 0.6	NO <sub>x</sub> 100	VOC 5.5	CO 84
PTE (ton/yr)	7.51E-04	3.00E-03	2.37E-04	3.95E-02	2.17E-03	3.32E-02

\* Emission factors are from AP-42, Section 1.4 (Supplement D 3/98).

**Methodology**

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu

PTE (tons/yr) = Emission Factor (lb/MMcf) x Potential Throughput (MMcf/yr) x 1 ton/2000 lbs

**Appendix A: Emission Calculations  
HAP and Criteria Pollutant Emissions  
From Natural Gas Boilers (EU63 and EU64)**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

Heat Input Capacity  
(MMBtu/hr)  
370 (185 MMBtu/hr per boiler)

Potential Throughput  
(MMcf/yr)  
3178

### 1. Criteria Pollutant Emissions

Pollutant	Emission Factor * (lb/MMBtu)	PTE (ton/yr)	PTE (lb/hr)
VOC	0.002	3.24	0.74
PM	0.002	3.24	0.74
PM <sub>10</sub>	0.005	8.10	1.85
CO	0.018	29.2	6.66
SO <sub>2</sub>	0.005	8.10	1.85
NO <sub>x</sub>	0.024	38.9	8.88

\* All emission factors provided by the source and are based on manufacturer's guarantee, except PM which is based on AP-42, Section 1.4, Table 1.4-2 (7/98).

#### Methodology

PTE (ton/yr) = Emission Factor (lb/MMBtu) x Heat Input Capacity (MMBtu/hr) x 8760 hr/yr x 1 ton/2000 lb

### 2. HAP Emissions

Emission Factor * (lb/MMcf)	HAPs - Organics				
	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential to Emit (ton/yr)	3.34E-03	1.91E-03	0.12	2.86	5.40E-03

Emission Factor * (lb/MMcf)	HAPs - Metals				
	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential to Emit (ton/yr)	7.94E-04	1.75E-03	2.22E-03	6.04E-04	3.34E-03

\* Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (AP-42 Supplement D 3/98)

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

All Emission Factors are based on normal firing.

MMcf = 10<sup>6</sup> cubic feet

#### Methodology

Potential Throughput (MMcf/yr) = Heat Input Capacity (MMBtu/hr) x 8760 hr/yr x 1 MMcf/1020 MMBtu

Potential to Emit (ton/yr) = Potential Throughput (MMcf/yr) x Emission Factor (lb/MMcf) x 1 ton/2000 lb

**Appendix A: Emission Calculations  
Criteria Pollutants  
From the Emergency Generator (EU65)**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

Power Output (hp)	Power Output (MMBtu/hr)	Limited Operating Hours (hr/yr)
3740	26.82	100

Emission Factor * (lb/hp-hr)	Pollutant					
	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub> **	VOC	CO
Potential to Emit (ton/yr)	11.5	6.7	6.6	249.0	11.5	90.1
Limited PTE (ton/yr)	0.13	0.077	0.08	2.84	0.13	1.03

\* PM, PM10, SO<sub>2</sub>, CO, and VOC emission factors are from AP-42 (Supplement B 10/96), Tables 3.4-1 and 3.4-2.

PM10 emission factor in terms of (lb/MMBtu).

\*\* NO<sub>x</sub> Emission Factor based on manufacturer guarantee of compliance with NSPS Subpart IIII requirements.

**Methodology**

Potential to Emit (ton/yr) = Power Output (hp) x Emission Factor (lb/hp-hr) x 8760 hr/yr x 1 ton/2000 lb

Potential to Emit PM10 (ton/yr) = Power Output (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hr/yr x 1 ton/2000 lb

Limited PTE (ton/yr) = Power Output (hp) x Emission Factor (lb/hp-hr) x Limited Operating Hours (hr/yr) x 1 ton/2000 lb

Limited PTE PM10 (ton/yr) = Power Output (MMBtu/hr) x Emission Factor (lb/MMBtu) x Limited Operating Hours (hr/yr) x 1 ton/2000 lb

**Appendix A: Emission Calculations  
Criteria Pollutants  
From the Emergency Fire Pump (EU66)**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

Power Output (hp)	Limited Operating Hours (hr/yr)
290	100

Emission Factor (lb/hp-hr) *	Pollutant						
	PM **	PM <sub>10</sub> **	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	HAPs
2.20E-03	2.20E-03	2.05E-03	3.10E-02	6.68E-03	2.47E-03	-	
Potential to Emit (ton/yr)	2.79	2.60	39.38	8.48	3.14	Negligible	
Limited PTE (ton/yr)	3.19E-02	2.97E-02	4.50E-01	9.69E-02	3.58E-02	Negligible	

\* 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).

\*\* Assume PM10 emissions are equal to PM emissions and TOC (total organic compounds) emissions are equal to VOC emissions.

**Methodology**

Potential to Emit (ton/yr) = Power Output (hp) x Emission Factor (lb/hp-hr) x 8760 hr/yr x 1 ton/2000 lb

Limited PTE (ton/yr) = Power Output (hp) x Emission Factor (lb/hp-hr) x Limited Operating Hours (hr/yr) x 1 ton/2000 lb

**Appendix A: Emission Calculations  
Fugitive Emissions  
From Paved and Unpaved Roads**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Emission Factors: AP-42**

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM<sub>10</sub> emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E = emission factor (lb/vehicle mile traveled)	
sL (non-Winter) = road surface silt loading (g/m <sup>2</sup> ) =	0.6 g/m <sup>2</sup> (AP-42, Table 13.2.1-3)
sL (Winter) = sL (non-Winter) x 4 (g/m <sup>2</sup> ) =	2.4 g/m <sup>2</sup> (AP-42, Table 13.2.1-3)
w = mean vehicle weight (ton) =	29.0 ton
k = empirical constant =	0.082 (for PM) 0.016 (for PM <sub>10</sub> )
a = empirical constant =	0.65
b = empirical constant =	1.5
C = emission factor for exhaust, brake and tire wear	0.00047 (for PM and PM <sub>10</sub> )
p = number of days per year with 0.01 inches of precipitation	117 days

PM Emission Factor (non-Winter) =	$(0.082 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460) =$	<b>1.04 lb/mile</b>
PM <sub>10</sub> Emission Factor (non-Winter) =	$(0.016 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460) =$	<b>0.20 lb/mile</b>

PM Emission Factor (Winter) =	$(0.082 \times (2.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460) =$	<b>2.55 lb/mile</b>
PM <sub>10</sub> Emission Factor (Winter) =	$(0.016 \times (2.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460) =$	<b>0.50 lb/mile</b>

PM Emission Factor (Average Annual) =	$((\text{PM Emission Factor (non-Winter)} \times 9) + (\text{PM Emission Factor (Winter)} \times 3))/12 =$	<b>1.42 lb/mile</b>
PM <sub>10</sub> Emission Factor (Average Annual) =	$((\text{PM10 Emission Factor (non-Winter)} \times 9) + (\text{PM10 Emission Factor (Winter)} \times 3))/12 =$	<b>0.28 lb/mile</b>

**2. Potential to Emit (PTE) of PM/PM10 from Paved Roads:**

Vehicle Type	Average Weight of Vehicle (ton)	Number of Vehicles * (vehicles/yr)	Round Trip Distance * (mile/vehicle)	Vehicle Mile Traveled (VMT) (mile/yr)	Traffic Component (%)	Component Vehicle Weight (ton)	PTE of PM (ton/yr)	PTE of PM <sub>10</sub> (ton/yr)
Grain Receiving	29.0	47,642	1.37	65,270	70.0%	20.30	46.18	8.98
DDGS Loadout	29.0	14,888	1.37	20,397	21.87%	6.34	14.43	2.81
Ethanol Loadout **	29.0	7,500	0.92	6,900	7.4%	2.15	4.88	0.95
Denaturant Receiving	29.0	750	0.92	690	0.7%	0.21	0.5	0.09
<b>Total</b>				<b>93,256</b>	<b>100%</b>	<b>29</b>	<b>66.0</b>	<b>12.8</b>

\* This information is provided by the source.

\*\* The facility is taking a limit on the amount of ethanol that may be loaded out via truck.

**Methodology**

Vehicle Mile Traveled (VMT) (mile/yr) = Number of Vehicles (vehicles/yr) x Round Trip Distance (mile/vehicle)

Traffic Component (%) = Component VMT / Total VMT x 100%

Component Vehicle Weight (ton) = Average Weight of Vehicle (ton) x Traffic Component (%)

PTE of PM/PM<sub>10</sub> before Control (ton/yr) = VMT (mile/yr) x PM/PM<sub>10</sub> Emission Factors (Average Annual) x 1 ton/2000 lb

**Appendix A: Emission Calculations  
Fugitive Emissions  
From Paved and Unpaved Roads**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:**

The source will utilize sweeping and a Dust Control Plan to control the fugitive dust emissions. The control efficiency is assumed to be 50%.

PTE of PM after Control =	66.0 ton/yr x (1-50%) =	<b>32.99 ton/yr</b>
PTE of PM <sub>10</sub> after Control =	12.83 ton/yr x (1-50%) =	<b>6.41 ton/yr</b>

**4. Unpaved Road Emission Factors: AP-42**

According to AP-42, Section 13.2.2 Unpaved Roads, November 2006, the PM/PM<sub>10</sub> emission factors for unpaved roads can be estimated from the following equation:

$$E = k (s/12)^a (W/3)^b [(365 - P)/365]$$

where,

E = emission factor (lb/vehicle mile traveled)	4.9 dimensionless (PM <sub>30</sub> or TSP)
k = particle size multiplier	1.5 dimensionless (PM <sub>10</sub> )
s = surface material silt content (%)	8.5 % (Table 13.2.2-1)
W = mean vehicle weight	5.00 ton
a = empirical constant	0.7 PM-30 or TSP Table 13.2.2-2
	0.9 PM-10 Table 13.2.2-2
b = empirical constant	0.45 PM-30 or TSP Table 13.2.2-2
	0.45 PM-10 Table 13.2.2-2
P = number of days per year with 0.01 inches of precipitation	117 days

PM Emission Factor =	(4.9) x (8.5/12) <sup>0.7</sup> x (5/3) <sup>0.45</sup> [(365-117)/365] =	<b>3.29 lb/mile</b>
PM <sub>10</sub> Emission Factor =	(1.5) x (8.5/12) <sup>0.9</sup> x (5/3) <sup>0.45</sup> [(365-117)/365] =	<b>0.94 lb/mile</b>

**5. Potential to Emit (PTE) of PM/PM10 from unpaved roads:**

Assumptions:	Number of vehicles (vehicles/day) =	2
	Length of unpaved roads (mile) =	0.1 (one-way, estimated)

Emission Area	Vehicle Weight (ton)	Total VMT * (mile/yr)	Total Vehicle Emissions (lb/yr)	Total Vehicle Emissions (ton/yr)
Maintenance Roads (PM)	5.00	146	481	0.24
Maintenance Roads (PM <sub>10</sub> )	5.00	146	137	0.07

\* Assumes all vehicles make a round-trip (0.2 miles traveled per day per vehicle).

**Methodology**

Total VMT (mile/yr) = Number of Vehicles (vehicles/day) x Distance Traveled (mile/vehicle) x 365 (day/yr)

Total Vehicle Emissions (ton/yr) = Unpaved VMT (mile/yr) x PM/PM<sub>10</sub> Emission Factors x 1 ton/2000 lb

**Appendix A: Emission Calculations**  
**VOC and HAP Emissions**  
**From Equipment Leaks**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Fugitive VOC Emissions from Fermentation:**

Equipment Component Source	Product	Component Count *	Emission Factor** (kg/hr-component)	Subpart VV Control Effectiveness* ** (%)	VOC Weight %	Fugitive VOC Emissions (ton/yr)
Valves	Gas/Vapor	0	0.00597	87%	13%	0.00
Valves	Light Liquid	146	0.00403	84%	13%	0.12
Pumps	Light Liquid	12	0.01990	69%	13%	0.09
Compressor Seals	Gas/Vapor	0	0.22800	0%	13%	0.00
Pressure Relief Valves	Gas/Vapor	8	0.10400	87%	13%	0.14
Sampling Connections	All	0	0.01500	0%	13%	0.00
Open-Ended Lines	All	14	0.00170	0%	13%	0.03
Flanges/Connectors	All	164	0.00183	0%	13%	0.38
<b>Total</b>						<b>0.75</b>

**2. Fugitive VOC Emissions from Distillation:**

Equipment Component Source	Product	Component Count *	Emission Factor** (kg/hr-component)	Subpart VV Control Effectiveness *** (%)	VOC Weight %	Fugitive VOC Emissions (ton/yr)
Valves	Gas/Vapor	206	0.00597	87%	81.7%	1.26
Valves	Light Liquid	0	0.00403	84%	81.7%	0.00
Pumps	Light Liquid	9	0.01990	69%	81.7%	0.44
Compressor Seals	Gas/Vapor	0	0.22800	0%	81.7%	0.00
Pressure Relief Valves	Gas/Vapor	1	0.10400	87%	81.7%	0.11
Sampling Connections	All	0	0.01500	0%	81.7%	0.00
Open-Ended Lines	All	70	0.00170	0%	81.7%	0.94
Flanges/Connectors	All	115	0.00183	0%	81.7%	1.66
<b>Total</b>						<b>4.41</b>

**3. Fugitive VOC Emissions from Tank Farm:**

Equipment Component Source	Product	Component Count *	Emission Factor** (kg/hr-component)	Subpart VV Control Effectiveness *** (%)	VOC Weight %	Fugitive VOC Emissions (ton/yr)
Valves	Gas/Vapor	0	0.00597	87%	100%	0.00
Valves	Light Liquid	53	0.00403	84%	100%	0.33
Pumps	Light Liquid	5	0.01990	69%	100%	0.30
Compressor Seals	Gas/Vapor	0	0.22800	0%	100%	0.00
Pressure Relief Valves	Gas/Vapor	0	0.10400	87%	100%	0.00
Sampling Connections	All	0	0.01500	0%	100%	0.00
Open-Ended Lines	All	14	0.00170	0%	100%	0.23
Flanges/Connectors	All	61	0.00183	0%	100%	1.08
<b>Total</b>						<b>1.94</b>

**Methodology (1 through 3)**

\* Component count estimated based on similar ethanol plants.

\*\* Emission factors are from Protocol for Equipment leak Emission Estimates, EPA-453/R-95-017.

\*\*\* Control Effectiveness is from Protocol for Equipment leak Emission Estimates, EPA-453/R-95-017, Table 5-2.

Fugitive VOC Emissions (ton/yr) = Component Count x Emission Factor (kg/hr-component) x (1 lb/0.45359 kg) x 8760 hr/yr x 1 ton/2000 lb x (1-Control Effectiveness %) x VOC Weight %

**Appendix A: Emission Calculations  
VOC and HAP Emissions  
From Equipment Leaks**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**4. Fugitive VOC Emissions - Total:**

Equipment Component Source	Total Fugitive VOC Emissions (ton/yr)
Valves	1.26
Valves	0.45
Pumps	0.83
Compressor Seals	0.00
Pressure Relief Valves	0.24
Sampling Connections	0.00
Open-Ended Lines	1.20
Flanges/Connectors	3.11
<b>Total</b>	<b>7.09</b>

**Methodology**

Total Fugitive VOC Emissions (ton/yr) = (Fugitive VOC Emissions from Fermentation) + (Fugitive VOC Emissions from Distillation)  
+ (Fugitive VOC Emissions from Tank Farm)

**5. Fugitive HAP Emissions:**

HAP	HAP Fraction*	Fugitive HAP Emissions (ton/yr)
Acetaldehyde	2.00E-04	1.42E-03
Methanol	2.00E-04	1.42E-03
Benzene	2.50E-03	1.77E-02
Carbon Disulfide	2.00E-05	1.42E-04
Cumene	1.00E-04	7.09E-04
Ethylbenzene	5.00E-05	3.55E-04
n-Hexane	5.00E-02	3.55E-01
Toluene	5.00E-03	3.55E-02
Xylenes	5.00E-04	3.55E-03
<b>Total</b>		<b>0.416</b>

\* This is the HAP fraction based on stack testing of similar sources.

**Methodology**

Fugitive HAP Emissions (ton/yr) = Total Fugitive VOC Emissions (ton/yr) x HAP Fraction

**Appendix A: Emission Calculations**  
**PM/PM10 Emissions**  
**From the the Cooling Tower**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

**1. Process Description:**

Type of Cooling Tower:	Induced Draft
Circulation Flow Rate:	35,000 gal/min
Total Drift:	0.005% of the circulating flow
Total Dissolved Solids:	2,000 ppm
Density:	8.345 lb/gal

**2. Potential to Emit PM/PM10:**

## Assumptions:

1. All dissolved solids become PM<sub>10</sub> emissions and assume PM emissions are equal to PM<sub>10</sub> emissions.
2. Total dissolved solids concentration = 2000 ppmw.

$$\text{PTE of PM/PM}_{10} \text{ (lb/hr)} = 35000 \text{ gal/min} \times 60 \text{ min/hr} \times 0.005\% \times 8.345 \text{ lb/gal} \times 2000 \text{ ppm} \times 1/10^6 \text{ ppm} = \mathbf{1.75 \text{ lb/hr}}$$

$$\text{PTE of PM/PM}_{10} \text{ (ton/yr)} = 1.75 \text{ lb/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lb} = \mathbf{7.68 \text{ ton/yr}}$$

**Appendix A: Emission Calculations  
Criteria Pollutant Emissions  
From Insignificant Combustion Activities - Natural Gas-Fired Space Heaters**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

Maximum Heat Input (MMBtu/hr)	Potential Throughput (MMcf/yr)
2.5	22.3

	Pollutant					
	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor * (lb/MMcf)	1.9	7.6	0.6	100.0	5.5	84.0
Potential to Emit (ton/yr)	2.12E-02	8.49E-02	6.70E-03	1.12E+00	6.14E-02	9.38E-01

\* Emission factors from Fifth Edition AP-42, Section 1.4, "Natural Gas Combustion", 7/98.

MMcf = 10<sup>6</sup> cubic feet

**Methodology**

Potential Throughput (MMcf/yr) = Heat Input Capacity (MMBtu/hr) x 8760 hr/yr x 1 MMcf/1020 MMBtu  
 Potential to Emit (ton/yr) = Potential Throughput (MMcf/yr) x Emission Factor (lb/MMcf) \* 1 ton/2000 lb

**Appendix A: Emission Calculations  
Potential to Emit After Issuance Summary**

**Company Name:** Renewable Agricultural Energy, Inc.  
**Address:** Cayuga, IN 47928  
**FESOP:** 165-24286-00082  
**Reviewer:** ERG/MP  
**Date:** March 9, 2007

<b>Emission Units</b>	<b>PM (ton/yr)</b>	<b>PM<sub>10</sub> (ton/yr)</b>	<b>SO<sub>2</sub> (ton/yr)</b>	<b>NO<sub>x</sub> (ton/yr)</b>	<b>VOC (ton/yr)</b>	<b>CO (ton/yr)</b>	<b>Total HAPs (ton/yr)</b>
Grain Receiving and Handling	10.59	10.59	-	-	-	-	-
Grain Receiving - Fugitive	2.27	0.53	-	-	-	-	-
Fermentation	-	-	-	-	37.5	-	5.31
RTO Stacks	38.0	38.0	61.3	52.6	34.4	62.1	7.6
Boilers	3.24	8.10	8.10	38.9	3.2	29.2	3.00
DDGS Handling and Loadout	0.90	0.90	-	-	-	-	-
DDGS Loadout - Fugitive	1.60	0.54	-	-	-	-	-
Wet Cake Storage*	-	-	-	-	See Note	-	See Note
Ethanol Loading Racks	-	-	-	-	3.35	-	0.18
Ethanol Loadout Flare **	0.02	0.02	0.00024	2.04	See Note	5.04	See Note
Paved Roads (Fugitive)	33.0	6.41	-	-	-	-	-
Unpaved Roads (Fugitive)	0.24	0.07	-	-	-	-	-
Cooling Tower	7.68	7.68	-	-	-	-	-
Emergency Generators	0.13	0.08	0.08	2.84	0.13	1.03	Negligible
Emergency Fire Pump	0.03	0.03	0.03	0.45	0.04	0.10	Negligible
Insignificant Space Heaters	0.02	0.08	0.01	1.12	0.06	0.94	
Storage Tanks	-	-	-	-	1.77	-	0.23
Equipment Leaks	-	-	-	-	7.09	-	0.42
Other Insignificant Activities	1.00	1.00	-	-	1.00	-	-
<b>Total PTE</b>	<b>98.7</b>	<b>74.1</b>	<b>69.5</b>	<b>97.9</b>	<b>88.6</b>	<b>98.4</b>	<b>16.7</b>

\* This plant is capable of producing both DDGS and WDGS. Emissions from DDGS production is the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.

\*\* VOC and HAP emissions from ethanol loadout are included in the total for the ethanol loading racks.