INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: February 8, 2006

RE: ASA Linden, LLC / 107-21453-00061

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

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot 1/10/05

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

ASA Linden, LLC
173 West County Road 1100 North
Linden, Indiana 47955

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. **This permit also addresses new source review requirements and is intended to fulfill the new source review procedures and permit revision requirements pursuant to 326 IAC 2-8-11.1, applicable to those conditions.**

Operation Permit No.: F107-21453-00061	
Issued by: Original signed by Paul Dubenetzky, Assistant Commissioner Office of Air Quality	Issuance Date: February 8, 2006 Expiration Date: February 8, 2011

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 A.3, and A.4 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

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

The Permittee owns and operates a stationary ethanol production plant.

Authorized individual:	Senior Manager Director
Source Address:	173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address:	4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
General Source Phone:	(214) 520-2820
SIC Code:	2869
Source Location Status:	Montgomery Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD Rules Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

The following two (2) companies will be located at the same location (173 West County Road 1100 North, Linden, Indiana 47955):

(a) Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), an existing grain elevator (SIC 5153), which started operation in 1972.

(b) ASA Linden, LLC (Plant ID #107-00061), a new ethanol production plant (SIC 2869). All the grain received at the ethanol plant will be from Cargill AgHorizons - Linden Grain Elevator.

Since these two (2) plants are located at the same property and have a supporting relationship, IDEM, OAQ has determined that these two (2) plants are considered one (1) single source. Separate FESOPs will be issued to Plant #107-00009 and #107-00061 solely for administrative purposes.

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

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

(a) One (1) corn conveyor, identified as EU001, constructed in 2005, with a maximum throughput rate of 420 tons of corn per hour, controlled by baghouse CE001, with emissions exhausted through stack EP001.

(b) Four (4) hammermills, identified as EU002 through EU005, constructed in 2005, each with a maximum throughput rate of 36 tons of corn per hour, controlled by baghouse CE002, with emissions exhausted through stack EP002.

(c) One (1) fermentation process, constructed in 2005, with a maximum throughput rate of 13,470 gallons of ethanol per hour, and consisting of the following:

(1) Seven (7) fermenters, identified as EU025 through EU031, controlled by CO_2 scrubber CE004, with emissions exhausted through stack EP004.

(2) One (1) beer well, identified as EU032, controlled by CO_2 scrubber CE004, with emissions exhausted through stack EP004.

(d) Two (2) thermal oxidizers with heat recovery steam generator (TO/HRSG) systems, identified as CE003 and CE006, constructed in 2005, each with a maximum heat input capacity of 143 MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack EP003.

(e) One (1) distillation process, constructed in 2005, with a maximum throughput rate of 13,470 gallons of ethanol per hour, controlled by the TO/HRSG systems (CE003 and CE006), with emissions exhausted through stack EP003. This process consists of the following:

(1) One (1) mixer, identified as EU006.

(2) Two (2) slurry tanks, identified as EU007 and EU008.

(3) One (1) flash tank, identified as EU009.

(4) One (1) cook cube, identified as EU010.

(5) Four (4) liquifaction tanks, identified as EU011 through EU014.

(6) Two (2) yeast tanks, identified as EU015 and EU016.

(7) One (1) beer column, identified as EU017.

(8) One (1) side stripper, identified as EU018.

(9) One (1) rectifier column, identified as EU019.

(10) One (1) 190 proof condenser, identified as EU020.

(11) Molecular sieves, identified as EU021.

(12) One (1) 200 proof condenser, identified as EU022.

(f) Two (2) natural gas fired DDGS dryers, identified as EU039 and EU040, constructed in 2005, each with a maximum heat input rate of 34.25 MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by the multicyclones C60 and C61 and the TO/HRSG system CE003, with emissions exhausted to stack EP003.

(g) Two (2) natural gas fired DDGS dryers, identified as EU042 and EU043, constructed in 2005, each with a maximum heat input rate of 34.25 MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by multicyclones C70 and C71 and the TO/HRSG system CE006, with emissions exhausted to stack EP003.

(h) One (1) DDGS cooling drum, identified as EU046, constructed in 2005, with a maximum throughput rate of 100 tons/hr of DDGS, controlled by the TO/HRSG systems CE003 and CE006, and exhausting to stack EP003. Up to 5% bypass of the exhaust is controlled by baghouse CE008 which exhausts to stack EP007.

(i) One (1) DDGS handling and loadout operation, constructed in 2005, with a maximum throughput rate of 120 tons/hr of DDGS, controlled by baghouse CE005, with emissions exhausted to stack EP005, and consisting of the following:

(1) Two (2) DDGS storage bins, identified as EU035;

(2) One (1) DDGS conveyor, identified as EU036; and

(3) One (1) DDGS truck/rail loadout spout, identified as EU037.

(j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU047, constructed in 2005, with a maximum throughput rate of 48,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. Both the railcar loading and truck loading processes are controlled by the enclosed flare CE009, which has a maximum heat input capacity of 6.4 MMBtu/hr and exhausts through stack EP008.

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

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

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

(b) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

(c) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(d) Forced and induced draft cooling tower system not regulated under a NESHAP, including a cooling tower which has a maximum flow rate of 55,000 gallons per minute.

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

(f) Heat exchanger cleaning and repair.

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

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

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

(j) Stationary fire pumps, including one (1) diesel fire pump, identified as EU048, constructed in 2005, with a maximum power output rate of 290 horsepower, and exhausting to stack EP009.

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

(1) Two (2) denatured ethanol storage tanks, identified as T001 and T002, constructed in 2005, each with a maximum capacity of 1,500,000 gallons.

(2) One (1) 200 proof storage tank, identified as T003, constructed in 2005, with a maximum capacity of 200,000 gallons.

(3) One (1) denaturant storage tank, identified as T004, constructed in 2005, with a maximum capacity of 200,000 gallons.

(4) One (1) 190 proof storage tank, identified as T005, constructed in 2005, with a maximum capacity of 200,000 gallons.

(5) One (1) fuel additive storage tank, identified as T006, constructed in 2005, with a maximum capacity of 2,300 gallons.

(6) One (1) methanator, constructed in 2005, controlled by 6.4 MMBtu/hr biomethanator flare CE007, and exhausting to stack EP006.

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

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

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

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

(1) incorporated as originally stated,

(2) revised, or

(3) deleted

by this permit.

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

SECTION B GENERAL CONDITIONS

B.1 Permit No Defense [IC 13]

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an authorized individual of truth, accuracy, and completeness. This

certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

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

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

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

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

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

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

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

(a) If required by specific 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, for the source as described in 326 IAC 1-6-3. At a minimum, the PMPs shall include:

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

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

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

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

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

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

(b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

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

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

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

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

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

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

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

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

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

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

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

(A) A description of the emergency;

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

(C) Corrective actions taken.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) That this permit contains a material mistake.

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

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

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

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

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

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

Request for renewal shall be submitted to:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(4) The Permittee notifies the:

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

and

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

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

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

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

(b) Emission Trades [326 IAC 2-8-15(c)]
The Permittee may trade 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.19 Permit Revision Requirement [326 IAC 2-8-11.1]

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

C.1 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 also make the requirements of 326 IAC 2-2 (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) 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 the source's potential to emit does not exceed the above specified limits.

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

C.3 Opacity [326 IAC 5-1]

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

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

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

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

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

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]

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

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

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

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

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

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

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

(e) Procedures for Asbestos Emission Control

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

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

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

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

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

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

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

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

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

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

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment

and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

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

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

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

C.12 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(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 40 CFR 60, Subpart Db.

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

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

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

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

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

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

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

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

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

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

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

(1) initial inspection and evaluation;

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

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

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

(1) monitoring results;

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

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

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

(e) The Permittee shall maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

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

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

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

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

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

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

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

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

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

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

(a) The 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 the "authorized individual" as defined by 326 IAC2-1.1-1(1).

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

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

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

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

(e) The first report covered the period commencing on the date of issuance of the original FESOP and ended on the last day of the reporting period. All subsequent reporting periods shall be based on calendar years, 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.20 Compliance with 40 CFR 82 and 326 IAC 22-1

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

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

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

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

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

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

(a) One (1) corn conveyor, identified as EU001, constructed in 2005, with a maximum throughput rate of 420 tons of corn per hour, controlled by baghouse CE001, with emissions exhausted through stack EP001.

(b) Four (4) hammermills, identified as EU002 through EU005, constructed in 2005, each with a maximum throughput rate of 36 tons of corn per hour, controlled by baghouse CE002, with emissions exhausted through stack EP002.

(i) One (1) DDGS handling and loadout operation, constructed in 2005, with a maximum throughput rate of 120 tons/hr of DDGS, controlled by baghouse CE005, with emissions exhausted to stack EP005, and consisting of the following:

(1) Two (2) DDGS storage bins, identified as EU035;

(2) One (1) DDGS conveyor, identified as EU036; and

(3) One (1) DDGS truck/rail loadout spout, identified as EU037.

Insignificant Activity:

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

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

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

Construction Conditions

General Construction Conditions

D.1.1 Permit No Defense

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

D.1.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.1.3 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.1.4 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.1.5 PM and PM10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]

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

Unit Description	Baghouse ID	PM Emission Limit (lbs/hr)	PM10 Emission Limit (lbs/hr)
Corn Conveyor EU001	CE001	0.26	0.14
Hammermills EU002 through EU005	CE002	1.73	1.73
DDGS Handling and Loadout Operations	CE005	0.11	0.05

(b) The total grain received by corn conveyor EU001 shall not exceed 1,260,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total DDGS produced shall not exceed 370,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be applied in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2 and 326 IAC 2-8.

Combined with the PM/PM10 emissions from other emission units and the PM/PM10 emissions from Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), 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.1.6 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 limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU001	Corn Conveyor	420	66.9
EU002	Hammermill	36	41.6
EU003	Hammermill	36	41.6
EU004	Hammermill	36	41.6
EU005	Hammermill	36	41.6
EU035	DDGS Storage	120	53.1
EU036	DDGS Conveyor	120	53.1
EU037	DDGS Loadout	120	53.1

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

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

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

D.1.7 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.1.8 Particulate Control

(a) In order to comply with Conditions D.1.5(a) and D.1.6, 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	Baghouse ID
EU001	Corn Conveyor	CE001
EU002	Hammermill	CE002
EU003	Hammermill	CE002
EU004	Hammermill	CE002
EU005	Hammermill	CE002
EU035	DDGS Storage	CE005
EU036	DDGS Conveyor	CE005
EU037	DDGS Loadout	CE005

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

In order to demonstrate compliance with Conditions D.1.5(a) and D.1.6, the Permittee shall perform PM and PM10 testing for baghouses CE001, CE002, and CE005 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. PM-10 includes filterable and condensible PM-10.

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

D.1.10 Visible Emissions Notations

(a) Visible emission notations of the baghouse stack exhausts (stacks EP001, EP002, and EP005) 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.1.11 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the corn conveyor (EU001), the hammermills (EU002 through EU005), and the DDGS handling and

loadout operations (EU035 through EU037), 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.

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.1.12 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

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

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

D.1.13 Record Keeping Requirements

(a) To document compliance with Condition D.1.5(b), the Permittee shall maintain monthly records of the amount of corn received by corn conveyor EU001.

(b) To document compliance with Condition D.1.5(c), the Permittee shall maintain monthly records of the amount of DDGS produced.

(c) To document compliance with Condition D.1.10, the Permittee shall maintain records of daily visible emission notations of the baghouse stack exhausts.

(d) To document compliance with Condition D.1.11, the Permittee shall maintain daily records of pressure drop for baghouses during normal operation.

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

D.1.14 Reporting Requirements

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

SECTION D.2 FACILITY OPERATION CONDITIONS – Fermentation Process

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

(c) One (1) fermentation process, constructed in 2005, with a maximum throughput rate of 13,470 gallons of ethanol per hour, and consisting of the following:

(1) Seven (7) fermenters, identified as EU025 through EU031, controlled by CO_2 scrubber CE004, with emissions exhausted through stack EP004.

(2) One (1) beer well, identified as EU032, controlled by CO_2 scrubber CE004, with emissions exhausted through stack EP004.

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

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

Construction Conditions

General Construction Conditions

D.2.1 Permit No Defense

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

D.2.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.2.3 Effective Date of the Permit [IC13-15-5-3]

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

D.2.4 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.2.5 VOC and HAP Emissions [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), emissions from wet scrubber CE004, which is used to control the emissions from the fermentation process, shall comply with the following:

(1) VOC emissions shall not exceed 10.2 lbs/hr.

(2) Acetaldehyde emissions shall not exceed 1.18 lbs/hr.

(3) Total HAP emissions shall not exceed 1.26 lbs/hr.

Combined with the VOC and HAP emissions from other emissions units and the VOC and HAP emissions from Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), the VOC emissions from the entire source are limited to less than 100 tons/yr, and the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.2.6 VOC Emissions [326 IAC 8-1-6]

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

(a) The VOC emissions from the fermentation process shall be controlled by wet scrubber CE004.

(b) The overall VOC control efficiency for the wet scrubber CE004 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(c) The VOC emissions from wet scrubber CE004 shall not exceed 10.2 lbs/hr.

D.2.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.2.8 except when otherwise specified in 40 CFR 60, Subpart VV.

D.2.8 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]

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

D.2.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.2.10 VOC and HAP Control

In order to comply with Conditions D.2.5 and D.2.6, wet scrubber CE004 shall be in operation and control emissions from the fermentation process at all times that this process is in operation.

D.2.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to verify compliance with Conditions D.2.5 and D.2.6, the Permittee shall perform VOC (including emission rate, and overall control efficiency) and Acetaldehyde testing for scrubber CE004 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.2.12 Parametric Monitoring

The Permittee shall monitor and record the pressure drop and flow rate of scrubber CE004, at least once per day when the associated fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 6.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Response to Excursions or Exceedances. When for any one reading, the flow rate of any of the scrubbers is

less than the minimum of 40 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.

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

D.2.13 Record Keeping Requirements

(a) To document compliance with Condition D.2.12, the Permittee shall maintain daily records of pressure drop and flow rate for scrubber CE004 during normal operation.

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

SECTION D.3 FACILITY OPERATION CONDITIONS – TO/HRSG Systems, Distillation, DDGS Drying, and DDGS Cooling

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

(d) Two (2) thermal oxidizer with heat recovery steam generator (TO/HRSG) systems, identified as CE003 and CE006, constructed in 2005, each with a maximum heat input capacity of 143 MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack EP003.

(e) One (1) distillation process, constructed in 2005, with a maximum throughput rate of 13,470 gallons of ethanol per hour, controlled by the TO/HRSG systems (CE003 and CE006), with emissions exhausted through stack EP003. This process consists of the following:

(1) One (1) mixer, identified as EU006.

(2) Two (2) slurry tanks, identified as EU007 and EU008.

(3) One (1) flash tank, identified as EU009.

(4) One (1) cook cube, identified as EU010.

(5) Four (4) liquifaction tanks, identified as EU011 through EU014.

(6) Two (2) yeast tanks, identified as EU015 and EU016.

(7) One (1) beer column, identified as EU017.

(8) One (1) side stripper, identified as EU018.

(9) One (1) rectifier column, identified as EU019.

(10) One (1) 190 proof condenser, identified as EU020.

(11) Molecular sieves, identified as EU021.

(12) One (1) 200 proof condenser, identified as EU022.

(f) Two (2) natural gas fired DDGS dryers, identified as EU039 and EU040, constructed in 2005, each with a maximum heat input rate of 34.25 MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by the multicyclones C60 and C61 and the TO/HRSG system CE003, exhausted to stack EP003.

(g) Two (2) natural gas fired DDGS dryers, identified as EU042 and EU043, constructed in 2005, each with a maximum heat input rate of 34.25 MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by multicyclones C70 and C71 and the TO/HRSG system CE006, with emissions exhausted to stack EP003.

(h) One (1) DDGS cooling drum, identified as EU046, constructed in 2005, with a maximum throughput rate of 100 tons/hr of DDGS, controlled by the TO/HRSG systems CE003 and CE006, and exhausting to stack EP003. Up to 5% bypass of the exhaust is controlled by baghouse CE008 which exhausts to stack EP007.

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

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

Construction Conditions

General Construction Conditions

D.3.1 Permit No Defense

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

D.3.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.3.3 Effective Date of the Permit [IC13-15-5-3]

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

D.3.4 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.3.5 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

The TO/HRSG systems (CE003 and CE006) are used to control the emissions from the distillation process, the DDGS dryers (EU039, EU040, EU042, and EU043), and the DDGS cooling drum (EU046). Pursuant to 326 IAC 2-8-4 (FESOP) and in order to make the requirements of 326 IAC 2-2 (PSD) not applicable, emissions from the TO/HRSG systems stack EP003 shall not exceed the following.

(a) PM10 emissions shall not exceed 9.0 lbs/hr.

(b) VOC emissions shall not exceed 8.5 lbs/hr.

(c) CO emissions shall not exceed 21.4 lbs/hr.

(d) SO_2 emissions shall not exceed 15.3 lbs/hr.

(e) NOx emissions shall not exceed 21.2 lbs/hr.

(f) Acetaldehyde emissions shall not exceed 0.72 lbs/hr.

(g) Total HAP emissions shall not exceed 2.19 lbs/hr.

Combined with the PM/PM10, VOC, SO_2, CO, NOx, and HAP emissions from other emission units, and the PM/PM10, SO_2, VOC, CO, NOx, and HAP emissions from Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), the PM/PM10, SO_2, VOC, CO, and NOx emissions from the entire source are each limited to less than 100 tons/yr and the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.3.6 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall control the VOC emissions from the distillation process and the DDGS dryers (EU039, EU040, EU042, and EU043), with a Best Available Control Technology (BACT), which has been determined to be the following:

(a) The VOC emissions from the distillation process shall be controlled by the TO/HRSG system CE003 or CE006.

(b) The VOC emissions from the DDGS dryers (EU039, EU040) shall be controlled by the TO/HRSG system CE003.

(c) The VOC emissions from the DDGS dryers (EU042, EU043) shall be controlled by the TO/HRSG system CE006.

(d) The overall VOC control efficiency for each of the TO/HRSG systems CE003 and CE006 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(e) The VOC emissions from the stack EP003 for the TO/HRSG systems (CE003 and CE006) shall not exceed 8.5 lbs/hr.

D.3.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the TO/HRSG systems CE003 and CE006, except when otherwise specified in 40 CFR Part 60, Subpart Db.

D.3.8 NOx Emissions [326 IAC 12-1][40 CFR 60, Subpart Db]

(a) Pursuant to 40 CFR 60.44b, the NOx emissions from the TO/HRSG systems (CE003 and CE006) shall not exceed 0.1 lbs/MMBtu.

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

D.3.9 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.3.10 except when otherwise specified in 40 CFR 60, Subpart VV.

D.3.10 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]

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

D.3.11 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from each of the 122 MMBtu/hr TO/HRSG systems (CE003 and CE006) shall be limited to 0.26 pounds per MMBtu heat input.

The limit was calculated using the following equation:

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

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

D.3.12 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)
EU039	DDGS Dryer	25.0	35.4
EU040	DDGS Dryer	25.0	35.4
EU042	DDGS Dryer	25.0	35.4
EU043	DDGS Dryer	25.0	35.4
EU046	DDGS Cooling Drum	100	51.3

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

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

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

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

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

D.3.13 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.3.14 VOC and HAP Control

In order to comply with Conditions D.3.5 and D.3.6, the TO/HRSG systems (CE003 and CE006) shall be in operation and control emissions from the distillation process, the DDGS dryers (EU039, EU040, EU042, and EU043), and the DDGS cooling drum (EU046) at all times that these units are in operation.

D.3.15 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11][326 IAC 2-2][40 CFR 60, Subpart Db]

(a) In order to demonstrate compliance with Conditions D.3.5, D.3.6, D.3.11, and D.3.12, the Permittee shall perform PM, PM10, VOC (including emission rate and overall control efficiency), NOx, SO_2, CO, and Acetaldehyde testing for the TO/HRSG systems stack (EP003) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

(b) In order to demonstrate compliance with Condition D.3.8(a) and pursuant to 40 CFR 60.46b(e), the Permittee shall conduct the performance test as required under 40 CFR 60.8 using the continuous system for monitoring nitrogen oxides under 40 CFR 60.48(b). For the initial compliance test, nitrogen oxides from the TO/HRSG systems stack (EP003) 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 40 CFR 60.44b. Following the date on which the initial performance test

is completed, the Permittee shall upon request determine compliance with the nitrogen oxides standards under 40 CFR 60.44b through the use of a 30-day performance test.

D.3.16 Continuous Emissions Monitoring [326 IAC 3-5] [326 IAC 12] [40 CFR 60, Subpart Db]

(a) Pursuant to 326 IAC 3-5 (Continuous Monitoring of Emissions) and 40 CFR 60.47b and 60.48b, a continuous monitoring system shall be calibrated, maintained, and operated for measuring NOx, which meets the performance specifications of 326 IAC 3-5-2.

(b) Pursuant to 326 IAC 3-5-4, if revisions are made to the continuous monitoring standard operating procedures (SOP), the Permittee shall submit updates to the department biennially.

(c) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 326 IAC 3-5, 326 IAC 10-4, 40 CFR 60, or 40 CFR 75.

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

D.3.17 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the TO/HRSG systems stack EP003 shall be performed once per day during normal daylight operations. A trained employee 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.3.18 Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on each of the TO/HRSG systems (CE003 and CE006) 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 Conditions D.3.5 and D.3.6, 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.3.19 Parametric Monitoring

(a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with limits in Conditions D.3.5 and D.3.6, as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the TO/HRSG systems 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.3.20 Record Keeping Requirements

(a) To document compliance with Condition D.3.17, the Permittee shall maintain records of daily visible emission notations of the stack EP003.

(b) To document compliance with Condition D.3.18, the Permittee shall maintain continuous temperature records for the thermal oxidizers and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(c) To document compliance with Condition D.3.19, the Permittee shall maintain daily records of the duct pressure or fan amperage for the thermal oxidizers.

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

D.3.21 Recordkeeping Requirements [40 CFR 60, Subpart Db] [326 IAC 12]

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

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

(1) Calendar date.

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

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

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

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

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

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

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

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

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

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

D.3.22 Reporting Requirements [40 CFR 60, Subpart Db] [326 IAC 12]

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

(b) Pursuant to 40 CFR 60.49b(b), the Permittee shall submit performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B.

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

(d) Pursuant to 40 CFR 60.49b(i), the Permittee shall submit reports containing the information recorded under 40 CFR 60.49b(g) and Condition D.3.21(b).

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

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

SECTION D.4 FACILITY OPERATION CONDITIONS – Ethanol Loading Rack

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

(j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU047, constructed in 2005, with a maximum throughput rate of 48,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. Both the railcar loading and truck loading processes are controlled by the enclosed flare CE009, which has a maximum heat input capacity of 6.4 MMBtu/hr and exhausts through stack EP008.

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

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

Construction Conditions

General Construction Conditions

D.4.1 Permit No Defense

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

D.4.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.4.3 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.4.4 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.4.5 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following emission limits for the ethanol loading rack (EU047):

(a) The Permittee shall use flare CE009 to control the emissions from the loading rack when this unit is in operation.

(b) The denatured ethanol loadout shall not exceed 123.9 MM gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) NOx emissions from flare CE009 shall not exceed 0.0168 lbs/kgal of denatured ethanol loaded.

(d) CO emissions from flare CE009 shall not exceed 0.0392 lbs/kgal of denatured ethanol loaded

(e) The ethanol loading rack (EU047) shall utilize the submerged loading method.

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

Combined with the VOC, CO, NOx, and HAP emissions from other emission units, and the VOC, CO, NOx, and HAP emissions from Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), the VOC, CO, and NOx emissions from the entire source are each limited to less than 100 tons/yr, and the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.4.6 VOC Emissions [326 IAC 8-1-6]

The potential VOC emissions from the ethanol loading rack (EU 47) are greater than 25 tons/yr. Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall collect and control the VOC emissions from the ethanol loading rack with a Best Available Control Technology (BACT). The BACT for this unit has been determined to be the following:

(a) The VOC emissions from the ethanol loading rack (EU047) shall be collected and controlled by enclosed flare CE009 when this unit is in operation.

(b) The overall efficiency for the enclosed flare CE009 (including the capture efficiency and destruction efficiency) shall be at least 98%.

(c) The VOC emissions from the flare CE009 shall not exceed 1.25 lbs/hr.

D.4.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.4.8 except when otherwise specified in 40 CFR 60, Subpart VV.

D.4.8 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]

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

D.4.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.4.10 VOC and HAP Control

In order to comply with Conditions D.4.5 and D.4.6, enclosed flare CE009 shall be in operation and control emissions from the ethanol loading rack (EU047) at all times when this unit is in operation.

D.4.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]

In order to demonstrate compliance with Conditions D.4.5 and D.4.6, the Permittee shall perform VOC (including emission rate and overall control efficiency), CO, and NOx testing for enclosed flare CE009 within 60 days after achieving the maximum production, 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.4.12 Flare Pilot Flame

In order to comply with Conditions D.4.5 and D.4.6, the Permittee shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading rack is in operation.

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

D.4.13 Record Keeping Requirements

(a) To document compliance with Condition D.4.5(b), the Permittee shall maintain monthly records of the amount of denatured ethanol loadout.

(b) To document compliance with Condition D.4.12, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading rack is in operation.

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

D.4.14 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.5(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 – Fire Pump and Biomethanator

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

(j) Stationary fire pumps, including one (1) diesel fire pump, identified as EU048, constructed in 2005, with a maximum power output rate of 290 horsepower, and exhausting to stack EP009.

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

(6) One (1) methanator, constructed in 2005, controlled by 6.4 MMBtu/hr biomethanator flare CE007, and exhausting to stack EP006.

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

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

D.5.1 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

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

(a) The operating hours for the diesel fire pump (EU048) shall not exceed 250 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The NOx emissions from the diesel fire pump (EU048) shall not exceed 8.99 lbs/hr.

(c) The CO emissions from the diesel fire pump (EU048) shall not exceed 1.94 lbs/hr.

(d) The biomethanator flare (CE007) shall not operate when any of the DDGS dryers (EU39, EU40, EU42, and EU43) is in operation.

Combined with the CO and NOx emissions from other emission units, and the CO and NOx emissions from Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), the CO 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.

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

D.5.2 Record Keeping Requirements

(a) To document compliance with Condition D.5.1(a), the Permittee shall maintain monthly records of the operating hours for the diesel fire pump (EU048).

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

D.5.3 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.5.1(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30)

days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.6 FACILITY OPERATION CONDITIONS – Storage Tanks

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

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

(1) Two (2) denatured ethanol storage tanks, identified as T001 and T002, constructed in 2005, each with a maximum capacity of 1,500,000 gallons.

(2) One (1) 200 proof storage tank, identified as T003, constructed in 2005, with a maximum capacity of 200,000 gallons.

(3) One (1) denaturant storage tank, identified as T004, constructed in 2005, with a maximum capacity of 200,000 gallons.

(4) One (1) 190 proof storage tank, identified as T005, constructed in 2005, with a maximum capacity of 200,000 gallons.

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

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

D.6.1 Volatile Organic Compounds (VOC) [326 IAC 8-9]

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 T004:

(a) The types of volatile petroleum liquid stored;

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

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

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

D.6.2 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

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

D.6.3 Storage Tanks [326 IAC 12][40 CFR 60, Subpart Kb]

Pursuant to 40 CFR 60, Subpart Kb, the Permittee shall install internal floating roofs with tanks T001 through T005 and the shall comply with the following requirements in 40 CFR 60.112b (a)(1) for the internal floating roofs:

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

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

(1) A foam- 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.

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

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

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

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

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

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

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

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

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

D.6.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

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

D.6.5 Testing and Procedures [40 CFR 60, Subpart Kb] [326 IAC 12]

Pursuant to 40 CFR 60.113b, the Permittee shall comply with the following requirement:

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

(b) 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 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(c) For vessels equipped with a double-seal system as specified in 40 CFR 60.112b(a)(1)(ii)(B):

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

(2) Visually inspect the vessel as specified in 40 CFR 60.113(a)(2).

(d) 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 40 CFR 60.113(a)(2) and (a)(3)(ii) and at intervals no greater than 5 years in the case of vessels specified in 40 CFR 60.113(a)(3)(i).

(e) Notify the IDEM, OAQ in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by 40 CFR 60.113(a)(1) and (a)(4) to afford IDEM, OAQ the opportunity to have an observer present. If the inspection required by 40 CFR 60.113 (a)(4) is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Permittee shall notify the IDEM, OAQ at least seven (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 IDEM, OAQ at least seven (7) days prior to the refilling.

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

D.6.6 Record Keeping Requirements

(a) To document compliance with Condition D.6.1, the Permittee shall maintain the following records for tank T004:

(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) Pursuant to 40 CFR 60.116b, the Permittee shall maintain the following records:

(1) The dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the source; and

(2) The VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period, for at least 2 years.

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

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

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

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

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

(a) Each pump in light liquid service shall:

(1) be monitored monthly to detect leaks by the methods specified in Condition E.1.9, except as provided in this condition; and

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

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

(c) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Condition E.1.8. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of Condition E.1.1(a), provided the following requirements are met:

(1) Each dual mechanical seal system is:

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

(B) Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of Condition E.1.7; or

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

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

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

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

(5) The following requirements are met:

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

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

(6) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in Condition E.1.1(d)(5)(B), a leak is detected. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Condition E.1.8. 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 Condition E.1.10(d)(1) and (d)(2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Conditions E.1.1(a), (c), and (d) if the pump:

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

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in Condition E.1.9(b), and

(3) Is tested for compliance with Condition E.1.1(e)(2) initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of Condition E.1.7, it is exempt from Conditions E.1.1(a) through (e).

(g) Any pump that is designated, as described in Condition E.1.10(e)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of Conditions E.1.1(a) and (d)(4) through (d)(6) if:

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

(2) The Permittee has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in Condition E.1.1(c) if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of Conditions E.1.1(a)(2) and (d)(4), and the daily requirements of Condition E.1.1(d)(5), provided that each pump is visually inspected as often as practicable and at least monthly.

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

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

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in Condition E.1.9(b).

(b) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in Condition E.1.8. 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 Condition E.1.9(b).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in Condition E.1.7 is exempted from the requirements of Conditions E.1.2(a) and (b).

(d) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of Conditions E.1.2(a) and (b), provided after each pressure release, a new rupture disk is installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in Condition E.1.8.

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

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

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in Condition E.1.3(a) shall comply with the following requirements:

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

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

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of Condition E.1.7; or

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

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

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

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

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of Conditions E.1.3(a) and (b).

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

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

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

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

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with Condition E.1.4(a) at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of Conditions E.1.4(a), (b) and (c).

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in Conditions E.1.4(a) through (c) are exempt from the requirements of Conditions E.1.4(a) through (c).

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

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

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

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

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

(d) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in Condition E.1.8. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

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

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in Condition E.1.10(d)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Condition E.1.5(a) if the valve:

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

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in Condition E.1.9(b), and

(3) Is tested for compliance with Condition E.1.5(f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in Condition E.1.10(e)(1), as an unsafe-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:

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

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

(h) Any valve that is designated, as described in Condition E.1.10(e)(2), as a difficult-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:

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

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

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

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

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

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

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

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

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

(c) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Condition E.1.8. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under Condition E.1.5(e).

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

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

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

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

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

(d) Flares used to comply with this subpart shall comply with the requirements of 40 CFR 60.18.

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

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

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

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

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

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

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

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

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in Condition E.1.7(h).

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

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

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

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of Condition E.1.7(f)(1)(A) and (f)(2).

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

(1) The Permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with Conditions E.1.7(f)(1)(A) or (f)(2); and

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

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

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

(2) The Process unit within which the closed vent system is located becomes an affected facility through 40 CFR 60.14 and 60.15, or the Permittee designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

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

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

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

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

(3) For each inspection during which a leak is detected, a record of the information specified in Condition E.1.10(b).

(4) For each inspection conducted in accordance with Condition E.1.9(a) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with Condition E.1.7(f)(1)(B) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

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

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

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

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

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

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

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

(2) When repair procedures are affected, the purged material is collected and destroyed or recovered in a control device complying with Condition E.1.7.

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

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

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

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

Compliance Determination Requirements

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

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

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

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

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

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

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

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

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

(c) The Permittee shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected

to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference in 40 CFR 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

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

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, Conditions E.1.9(c) (1) and (2) shall be used to resolve the disagreement.

(d) The Permittee shall demonstrate that equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68°F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference in 40 CFR 60.17) shall be used to determine the vapor pressures.

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

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

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

(f) The Permittee shall determine compliance with the standards of flares as follows:

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

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

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

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

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)
H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).
K_1 = 8.706 m/sec (metric units) = 28.56 ft/sec (English units)
K_2 = 0.7084 m^4/(MJ-sec) (metric units) = 0.087 ft^4/(Btu-sec) (English units)

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

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

Where:

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

C_i = Concentration of sample component "i," ppm

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

(5) Method 18 and ASTM D2504-67, 77, or 88 (Reapproved 1993) (incorporated by reference in 40 CFR 60.17) shall be used to determine the concentration of sample component "i."

(6) ASTM D2382-76 or 88 or D4809-95 (incorporated by reference in 40 CFR 60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.

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

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

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

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

(a) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, the following requirements apply:

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

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in Condition E.1.5(c) and no leak has been detected during those 2 months.

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

(b) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, the following information shall be recorded in a log in a readily accessible location:

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

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

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

(4) "Above 10,000" if the maximum instrument reading measured by the methods specified in Condition E.1.9(a) after each repair attempt is equal to or greater than 10,000 ppm.

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

(6) The signature of the employee whose decision it was that repair could not be affected without a process shutdown.

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

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

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

(c) The following information pertaining to the design requirements for closed vent systems and control devices described in Condition E.1.7 shall be recorded and kept in a readily accessible location:

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

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

(3) A description of the parameter or parameters monitored, as required in Condition E.1.7(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in Conditions E.1.1, E.1.2, and E.1.3 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in Conditions E.1.1, E.1.2, and E.1.3.

(d) The following information pertaining to all equipment subject to the requirements in Conditions E.1.1 through E.1.8and 40 CFR 60.482-1 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of 40 CFR 60, Subpart VV.

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

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

(4) The following information:

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

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

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

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

(e) The following information pertaining to all valves subject to the requirements of Conditions E.1.5(g) and (h) and to all pumps subject to the requirements of Conditions E.1.1(g) shall be recorded in a log that is kept in a readily accessible location:

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

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

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

(1) A schedule of monitoring.

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

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

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

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

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

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

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

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

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

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

(1) Process unit identification.

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

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

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

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

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

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

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: ASA Linden, LLC
Source Address: 173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address: 4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
FESOP No.: 107-21453-00061

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)_____

☐ Report (specify)_____

☐ Notification (specify)_____

☐ Affidavit (specify)_____

☐ Other (specify)_____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
Indianapolis, Indiana 46204-2251
Phone: 317-233-5674
Fax: 317-233-5967

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: ASA Linden, LLC
Source Address: 173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address: 4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
FESOP No.: 107-21453-00061

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

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

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

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

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

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

Form Completed by: _____
Title / Position: _____
Date: _____
Phone: _____

A certification is not required for this report.

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

FESOP Quarterly Report

Source Name: ASA Linden, LLC
Source Address: 173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address: 4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
FESOP No.: 107-21453-00061
Facility: Corn Conveyor EU001
Parameter: The amount of corn received
Limit: Less than 1,260,000 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: ASA Linden, LLC
Source Address: 173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address: 4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
FESOP No.: 107-21453-00061
Facility: DDGS Handling and Loadout Operations
Parameter: DDGS Production Rate
Limit: Less than 370,000 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: ASA Linden, LLC
Source Address: 173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address: 4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
FESOP No.: 107-21453-00061
Facility: Ethanol Loading Rack EU047
Parameter: Denatured Ethanol Loadout
Limit: Less than 123.9 MMgal 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: ASA Linden, LLC
Source Address: 173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address: 4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
FESOP No.: 107-21453-00061
Facility: Diesel Fire Pump EU048
Parameter: Operating Hours
Limit: Less than 250 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: ASA Linden, LLC
Source Address: 173 West County Road 1100 North, Linden, Indiana 47955
Mailing Address: 4311 Oak Lawn Avenue, Suite 650, Dallas, Texas 75219
FESOP No.: 107-21453-00061

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

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Page 2 of 2

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: ____

Title/Position: ____

Date: ____

Phone: ____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document
for a New Source Review and Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	ASA Linden, LLC
Source Location:	173 West County Road 1100 North, Linden, Indiana 47955
County:	Montgomery
SIC Code:	2869
Operation Permit No.:	F107-21453-00061
Permit Reviewer:	ERG/YC

On November 19, 2005, the Office of Air Quality (OAQ) had a notice published in the Journal Review, Crawfordsville, Indiana, stating that ASA Linden, LLC had applied for a New Source Review and Federally Enforceable State Operating Permit (FESOP) to construct and operate an ethanol production plan 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.

On December 7, 2005, ASA Linden, LLC (referred to as the "Permittee") submitted the following comment on the proposed FESOP. Bolded language has been added while language with a line through it has been deleted.

Comment:

The Permittee proposes to increase the maximum heat input capacity for each of the thermal oxidizers (CE003 and CE006) from 122 MMBtu/hr to 143 MMBtu/hr, and to decrease the maximum heat input capacity for each of the DDGS dryers (EU039, EU040, EU042, and EU043) from 45 MMBtu/hr to 34.25 MMBtu/hr. The total maximum heat input capacity for these units will decrease from 424 MMBtu/hr to 423 MMBtu/hr.

Response to Comment:

All the thermal oxidizers (CE003 and CE006) and the DDGS dryers (EU039, EU040, EU042, and EU043) will vent through a single stack (EP003). There will be no changes to the emission limits for stack EP003. The requested capacity change will not trigger new applicable requirements for the thermal oxidizers or DDGS dryers, and the emissions from the entire source, including the emissions from the collocated plant (Cargill AgHorizons – Linden Grain elevator, Plant ID #107-00009), will remain less than the Title V major source thresholds. Therefore, the unit descriptions for the thermal oxidizers and DDGS dryers in Condition A.3 and D.3 have been revised as follows:

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

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

. . .

(d) Two (2) thermal oxidizers with heat recovery steam generator (TO/HRSG) systems, identified as CE003 and CE006, constructed in 2005, each with a maximum heat input capacity of ~~122~~ **143** MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack EP003.

. . .

(f) Two (2) natural gas fired DDGS dryers, identified as EU039 and EU040, constructed in 2005, each with a maximum heat input rate of ~~45~~**34.25** MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by the multicyclones C60 and C61 and the TO/HRSG system CE003, with emissions exhausted to stack EP003.

(g) Two (2) natural gas fired DDGS dryers, identified as EU042 and EU043, constructed in 2005, each with a maximum heat input rate of ~~45~~**34.25** MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by multicyclones C70 and C71 and the TO/HRSG system CE006, with emissions exhausted to stack EP003.

. . .

SECTION D.3 FACILITY OPERATION CONDITIONS – TO/HRSG Systems, Distillation, DDGS Drying, and DDGS Cooling

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

(d) Two (2) thermal oxidizer with heat recovery steam generator (TO/HRSG) systems, identified as CE003 and CE006, constructed in 2005, each with a maximum heat input capacity of ~~122~~**143** MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack EP003.

. . .

(f) Two (2) natural gas fired DDGS dryers, identified as EU039 and EU040, constructed in 2005, each with a maximum heat input rate of ~~45~~**34.25** MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by the multicyclones C60 and C61 and the TO/HRSG system CE003, exhausted to stack EP003.

(g) Two (2) natural gas fired DDGS dryers, identified as EU042 and EU043, constructed in 2005, each with a maximum heat input rate of ~~45~~**34.25** MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by multicyclones C70 and C71 and the TO/HRSG system CE006, with emissions exhausted to stack EP003.

. . .

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

On December 14, 2005, Charles L. Berger, of Berger and Berger, on behalf of Plumbers and Steamfitters, Local 157 and their members (referred to as the "Commentor"), submitted comments on the proposed FESOP. The Commentor stated that all the comments they made to the draft FESOP for Hartford Energy, LLC (F009-21592-00024) and the draft FESOP for The Andersons Clymers Ethanol (F009-21536-00023) shall apply to this permit as applicable. The summary of the comments is as follows (bolded language has been added, the language with a

line through it has been deleted):

Comment 1:

The Commentor stated that since the source consists of ASA Linden, LLC (Plant #107-00061) and Cargill AgHorizons (Plant #107-00009), both permits should have been sent to public notice concurrently. The proposed FESOP only includes the emission units and limitations for the units located at ASA Linden, LLC. Without seeing the draft permit for Cargill AgHorizons, the Commentor stated that the proposed FESOP violates the public participation requirements and the application for construction of this new ethanol plant was incomplete. They also stated that the proposed FESOP fails to fulfill the requirements in 326 IAC 2-8-4(1) because it does not contain the emission limitations for the entire source.

Response to Comment 1:

The draft FESOP for the collocated grain elevator – Cargill AgHorizons (F107-21971-00009) is currently on public notice. From the TSDs for both F107-21453-00061 and F107-21971-00009, it is clear that the total potential to emit from the entire source (including Plant #107-00009 and Plant #107-00061) is limited to less than 100 tons/yr for PM and all the criteria pollutants. Therefore, this source is not subject to 326 IAC 2-2 (PSD).

Separate FESOPs will be issued to ASA Linden, LLC and Cargill AgHorizons because these two plants are owned by two different companies. The requirements for both plants are not included in a single permit solely for administrative purposes. Since these two (2) plants are considered a single source, IDEM will evaluate the total emissions from both plants for any future modifications.

No change has been made as a result of this comment.

Comment 2:

The Commentor stated that the proposed limits in the permit should not be considered BACT for the fermentation process, distillation process, and DDGS dryers because of the following reasons:

(a) The TSD did not evaluate combinations of controls in its BACT analysis. The Commentor has identified the following permits which require combinations of controls:

(1) The permit issued to Calgren Renewable Fuels, CA requires the fermentation process be controlled by a scrubber and a thermal oxidizer with a combined control efficiency of 99.5%.

(2) The permit issued to Phoenix Bio Industries LLC, CA requires two (2) wet scrubbers in series with a combined control efficiency of 99.5%.

(3) The permit issued to Pacific Ethanol Madera, CA requires that the scrubber gases be routed to a thermal oxidizer with a combined control efficiency of 99.9%.

(4) The permit issued to Agri-Energy, MN requires that scrubber gases be routed to the thermal oxidizer.

(b) The Commentor stated that higher scrubber and RTO control efficiencies have been required in other permits and guaranteed by vendors.

(c) The stack test results summarized in the Appendix B of the TSD (BACT Analysis) also indicated higher scrubber and RTO control efficiencies are achievable.

(d) The Commentor stated that the VOC concentration limit contained in the BACT requirements should be removed because it does not represent the maximum degree of reduction that is achievable as required by BACT.

(e) The VOC concentration limit is not enforceable as a practical matter because the permit does not disclose the conditions under which the VOC concentration is stipulated. The Commentor stated that the permit must be revised to state the following additional information if a concentration limit is retained: (1) oxygen content; (2) temperature and pressure; (3) averaging time; (4) test methods; and (5) molecular basis.

The Commentor also stated that the proposed limits in the permit were not considered BACT for the ethanol loading rack for the following reasons:

(a) The facility description stated that only truck loading is controlled by a flare. However, the TSD states that both truck and railcar loading will be controlled by the flare. If the railcar vapors are not controlled by the flare, BACT would not be satisfied.

(b) The permit should be revised to require the use of submerged loading and recordkeeping to report the type of loading used since the emission calculations were performed under the assumption of using the submerged loading method.

(c) The proposed VOC emission limit of 1.25 lbs/hr does not correspond to 98% VOC control unless the hours of operation are limited to 2,577 hours per year.

Response to Comment 2:

The BACT (326 IAC 8-1-6) for the fermentation process specifies that the source will control VOCs through the use of a scrubber, which must operate at a control efficiency of no less than ninety-eight percent (98%) or a VOC outlet concentration less than 20 ppmv. The BACT for the distillation process and DDGS dryers require the source to use a thermal oxidizer, which must achieve either a 98% control efficiency or a VOC outlet concentration less than 10 ppmv. This level of control efficiency is consistent with BACT determinations made in Indiana and in other States. IDEM has not identified any BACT requirements that are more stringent than 98% for ethanol production facilities.

IDEM has confirmed that there are at least three facilities in California that have a control efficiency requirement higher than 98% (synthetic minor limits). Based on discussions between IDEM and the San Joaquin Valley Unified Air Pollution Control District, IDEM has confirmed that these facilities have not demonstrated compliance with these limits through stack testing. IDEM is aware that other sources have achieved control efficiencies during testing that exceed 98%. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that

case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that 99% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

Conditions D.2.11 and D.3.15 (Testing Requirements) specify that the Permittee will use test methods approved by the Commissioner. The specific test methods and testing environment will be specified in the test protocol submitted by the Permittee as required in Condition C.9 (Performance Testing) and will be evaluated by IDEM, OAQ prior to the stack test. The most up to date EPA approved test method will be used; therefore, the test method is not specified in the permit.

The requirement to achieve an overall control efficiency of no less than 98% or a VOC outlet concentration not to exceed 20 ppmv (10 ppmv for RTOs) is consistent with BACT determinations made in Indiana and in other States. In addition, the establishment of a VOC concentration limitation in conjunction with a control efficiency requirement is consistent with the compliance requirements established by the US EPA as part of its national ethanol settlements and as part of the recently promulgated NESHAPs. The concentration requirement was established because at extremely low VOC concentrations, a control efficiency of 98% may not be achievable in practice. BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve it's optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. The account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that 98% is achievable, IDEM and the US EPA has used discretion in allowing sources to meet the control efficiency requirement during periods of moderate to high concentrations, but not during periods of extremely low VOC concentrations.

In order to limit the VOC emissions from the entire source to less than 100 tons/yr, both truck loading and railcar loading operations must be controlled by the enclosed flare, CE009, as stated in the TSD. Therefore, the unit description in Condition A.3 and Section D.4 have been corrected.

Since the emission calculations for the ethanol loading rack were performed based on the assumption of using submerged loading method during normal services (not vapor balance service), IDEM has decided to add the specifications for the liquid loading method in Condition D.4.5 (FESOP Limits) to ensure that the VOC emissions from the entire source are less than 100 tons/yr.

There are no limits on the number of operating hours in the draft permit for the ethanol loading rack (EU047). However, Condition D.4.5(b) (FESOP Limits) limits the amount of denatured ethanol loaded at the ethanol loading rack to 123.9 million gal/yr. Since the ethanol loading rack (EU047) has a maximum design capacity of 48,000 gallons per hour, the throughput limitation on the ethanol loading rack limits the operating hours for

this unit indirectly. IDEM does not believe an additional operating hour limit for the ethanol loading rack is necessary.

The following changes have been made to the permit as a result of these comments:

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

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

. . .

(j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU047, constructed in 2005, with a maximum throughput rate of 48,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. **Both t**~~T~~he **railcar loading and** truck loading process**es are** ~~is~~ controlled by the enclosed flare CE009, which has a maximum heat input capacity of 6.4 MMBtu/hr~~,~~ and exhausts through stack EP008.

SECTION D.4 FACILITY OPERATION CONDITIONS – Ethanol Loading Rack

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

(j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU047, constructed in 2005, with a maximum throughput rate of 48,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. **Both t**~~T~~he **railcar loading and** truck loading process**es are** ~~is~~ controlled by the enclosed flare CE009, which has a maximum heat input capacity of 6.4 MMBtu/hr~~,~~ and exhausts through stack EP008.

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

D.4.5 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following emission limits for the ethanol loading rack (EU047):

. . .

(e) The ethanol loading rack (EU047) shall utilize the submerged loading method.

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

. . .

Comment 3:

The Commentor stated that particulate matter emissions exceed the major source threshold because of the following reasons:

(a) The silt loading value used in the emission calculations for paved roads was not appropriate and results in an underestimate of the fugitive PM10 emissions.

(b) The silt loading value and the control efficiencies used in the permit application for Cargill AgHorizons was inconsistent with the value used in the draft permit for ASA Linden, LLC. If the correct silt loading value was used in the emission calculations for Cargill AgHorizons, the total potential to emit PM/PM10 from both plants would exceed 100 tons/yr.

Response to Comment 3:

IDEM has evaluated the emission calculations included in the application and investigated the claims made by the commenter with regard to the paved road calculations included in the permit. Based on IDEM's evaluation, the 0.6 grams per square meter value is consistent with the ranges prescribed in AP-42 for paved roads at this type of industrial facility. According to AP-42, Table 13.2.1-3, the default silt loading number is 0.6 g/m^2 for sites that have average daily traffic less than 500 vehicles per day. The averaged traffic at the proposed ethanol production plant will be about 85 vehicles per day.

Comments referring to the paved roads emission calculations at Cargill AgHorizons are based on the permit application for Cargill AgHorizons received on September 20, 2005. The emission calculations for Cargill AgHorizons have been adjusted and the revised version is included in the draft TSD for FESOP #107-21971-00009, which is currently on public notice. FESOP #107-21971-00009 for Cargill AgHorizons uses the same silt loading value and control efficiencies as applied in FESOP #107-21453-00061 for ASA Linden, LLC.

Based on the revised calculations, the total PM/PM10 emissions from these two (2) plants are less than 100 tons/yr after limits. Therefore, no changes were made as the result of this comment.

Comment 4:

The Commentor believes that CO emissions exceed 100 tons/yr from this source because of the following:

(a) The CO emissions from the fire pump were not included in the total emission calculations.

(b) According to the information received from IDEM, the CO emissions from the Cargill AgHorizons facility plus CO emissions from the ASA Linden facility will exceed 100 tons/yr.

Comment 5:

The Commentor stated that NOx emissions equal or exceed 100 tons/yr from this source because of the following:

(a) The NOx emissions from the fire pump were not included in the total emission calculations.

(b) According to the information received from IDEM, the NOx emissions from the Cargill AgHorizons facility plus NOx emissions from the ASA Linden facility will exceed 100 tons/yr.

Response to Comments 4 and 5:

In the Potential to Emit after Issuance table in the TSD for this permit, the diesel fire

pump was mislabeled as “emergency generator”. There will be no emergency generator installed at this source (see the emission unit lists in Conditions A.3 and A.4). The emissions from the diesel fire pump have been included in the total emissions from this source.

No changes have been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

The emission calculations referred to by the Commentor are those from the permit application for Cargill AgHorizons, submitted on September 20, 2005. The potential to emit from Cargill AgHorizons has been adjusted during the permit review process (for example, the proposed natural gas usage at the Cargill AgHorizons has been reduced). The proposed PTE for Cargill AgHorizons can be found in the draft FESOP #107-21971-00009, which is currently on public notice. According to the TSDs for FESOP #107-21971-00009 and FESOP #107-21453-00061, the total CO and NOx emissions from these two (2) plants are each limited to less than 100 tons/yr. No changes were made as a result of these comments.

Comment 6:

The Commentor stated that VOC emissions exceed 100 tons/yr from this source because the VOC emissions from the wet cake handling and storage were not included in the total potential to emit from this source.

Response to Comment 6:

The proposed ethanol production plant can produce either DDGS or MDGS as the byproducts. The DDGS production process uses heat to reduce the moisture content of the DGS produced from the distillation process. Most of the VOC is released during heating of the DGS. The MDGS production process does not apply heat to drive off the moisture in DGS. Consequently, the MDGS process will emit less VOC compared to the DDGS production process. In addition, the natural gas combustion process associated with the DDGS production process will generate other criteria pollutants. Therefore, the DDGS production is the worst case scenario. The potential to emit calculation for the DDGS dryers was calculated based on the assumption that all the DGS produced at the plant will be converted to DDGS. Therefore, the emissions from the MDGS production process, including wet cake storage and handling processes, were not included in the total PTE of the entire source. No change has been made as a result of this comment.

Comment 7:

The Commentor stated that IDEM failed to provide information requested pursuant to state law and denied the constitutional right to due process of law and equal protection of the law.

Response to Comment 7:

On July 5, 2005, IDEM, OAQ received Berger & Berger’s first information request seeking “… a copy of all papers in the file of Demeter Enterprises’ (now ASA Linden, LLC) application for an air permit at their Montgomery County Construction site.” On July 6, 2005, IDEM, OAQ, made its first response to this request by sending Berger & Berger a copy of the application and correspondence, totaling 206 pages. On July 20, 2005, IDEM,

OAQ also sent to Berger & Berger, by facsimile, the one page agenda for a June 9, 2005 meeting with ASA Linden, LLC, two pages of handwritten notes from the meeting, and an e-mail from Todd Potas of Natural Resources Group, Inc. to Scott Fulton, the previous IDEM, OAQ permit writer.

On September 28, 2005, IDEM, OAQ received a second request from Berger & Berger for the entire file of the air permit application for Demeter Enterprises (now ASA Linden, LLC). IDEM, OAQ responded on September 28, 2005, stating that it would respond to the request. IDEM, OAQ did make a substantive response on December 13, 2005.

On December 13, 2005, IDEM electronically forwarded to Berger & Berger 26 e-mails regarding ASA Linden. Several of the e-mails that originated from Kevin Miller of Natural Resources Group had attachments that could not be opened. IDEM, OAQ had encountered the same problem when it first received those e-mails. In a subsequent e-mail on December 13, 2005, IDEM, OAQ's Doug Wagner outlined this problem to Berger & Berger, identified the four e-mails whose attachments could be opened and resent all four of the useable documents. Those documents were a Material Safety Data Sheet for the product Chevron Superla DCO, totaling 8 pages, an emissions summary for units at the Cargill Grain Elevator, totaling one page, a summary and individual emission calculations for units at the Cargill AgHorizons – Linden Grain Elevator (Plant #107-00009), totaling seven pages, and a revised form GSD-05, General Source Data, that sets out the maximum capacity for the ethanol plant emission units in either tons per year or gallons per hour, totaling two pages.

IDEM, OAQ has not violated the constitutional right to due process or equal protection belonging to the Commentor. The Commentor was able to use the information supplied on December 13, 2005 in several of its comments on the draft permit. In addition, the Commentor has substantial due process rights available to it, if it finds IDEM, OAQ's final permit to be objectionable. The Commentor may seek administrative review of the final permit decision by filing a petition for review with the Indiana Office of Environmental Adjudication. Instructions on how to file such a claim are provided in the notice of decision that accompanies this Addendum to the Technical Support Document.

Comment 8 (Comment 7 in the addendum for Hartford Energy F009-21592-00024):

The Commentor stated that the permit limits are not enforceable and that the applicant is attempting to avoid the requirements of New Source Review ("NSR"), MACT, and the Title V operating permit program by limiting the project's potential to emit ("PTE") with production, operational, and emission limitations. The permit must meet certain minimum requirements to qualify for a FESOP, pursuant to 326 IAC 2-8-4, 2-8-5 and 2-8-6.

In addition, the limits included in a FESOP must be practically enforceable, and there must be sufficient monitoring, recordkeeping, and reporting to evaluate continuous compliance with the limits. The proposed monitoring is not adequate to assure continuous compliance.

Specific deficiencies include the following:

(a) Loadout Averaging Time: Compliance with the rolling annual denatured ethanol loadout average should be calculated on a daily basis unless not feasible.

(b) Fuel Sulfur Content: SO_2 testing requirements are not adequate and there are no restrictions on fuel sulfur content from the fuels burned at the TO or fire water pump.

c) TO Temperature: The temperature requirement should be a range with a minimum and maximum temperature, and the permit should specify response steps for out of range temperature readings.

(d) Visible Emissions: Visible emission notations are subjective, there is no correlation between PM10 mass emission rate and visible emissions, and there is no requirement for a training course for certification.

(e) Test Methods: The test method should be specified in the FESOP.

Response to Comment 8:

IDEM has determined that it is sufficient to require the Applicant to determine compliance with the rolling annual denatured loadout average at the end of each month. For this type of annualized throughput limit it is unnecessary to establish compliance on a daily basis. No changes were made as a result of this comment.

This source does not require restrictions on fuel sulfur content from the fuels burned at the TO/HRSG systems since they are only permitted to burn natural gas and waste gases from the process units. The sulfur content used to compute the SO_2 emissions from the diesel fire pump is 0.5%, which is the worst case scenario for diesel fuel. It is not necessary to limit the sulfur content in the fuel when the worst case scenario is assumed in the emission calculations.

IDEM establishes a minimum temperature requirement to ensure that the thermal oxidizers operate at or above the temperature at which the units have demonstrated compliance with the required control efficiency. There is an economic disincentive to operate at temperatures substantially higher than the established minimum. In addition, the temperature could increase as a result of sudden variations in VOC concentrations, which would be considered proper operation, and should not be considered a deviation.

With regard to visible emission notations, the calibration of what is normal and abnormal is established in the training of the employee on "the appearance and characteristics of normal visible emissions for that specific process." Because the emission characteristics vary with the type of process, it is not reasonable to establish a generic definition of "normal". This method of determining whether visible emissions are "normal" is very similar to the compliance monitoring methods cited by EPA's Portland Cement MACT, 40 CFR 63, Subpart LLL for determining whether raw mills and finish mills are operating properly. Please refer to 40 CFR 63.1350(e). Furthermore, the concept of "practical enforceability" should be applied to an emission limitation or standard. Monitoring requirements should be judged based upon their ability to ensure compliance with those emission limitations or standards. In this case, the emission limitations are the PM and opacity limitations established in 326 IAC 5-1, 326 IAC 6-3-2, to PM10 limitations necessary to render 326 IAC 2-7 not applicable, and the PM and PM10 limits necessary to render PSD not applicable. IDEM, OAQ considers the visual emissions notations of this permit to be part of an overall compliance monitoring strategy that is sufficient to ensure compliance with these rules. Requiring Permittees subject to the visual emissions notation condition to be trained in Method 9 monitoring, is overly burdensome to the source and not necessary. During IDEM, OAQ inspections, the inspector will perform Method 9 monitoring to also ensure compliance with 326 IAC 5-1. At that time, the inspector will review the visual emission notation records and establish a correlation between his Method 9 result and whether the source identifies the emissions as "normal" or "abnormal". He will be able to establish compliance with 326 IAC 5-1 over the time period covered by the records, based on the records and his correlation to the Method 9 results. No changes were made as a result of this comment.

IDEM does not include the specific test method for each test requirement in the permit. The Permittee is obligated to conduct testing to demonstrate compliance with the applicable emission limitations in accordance with Section C - Performance Testing of this FESOP. Section C specifies that all testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ. Additionally, the applicant is required to submit a protocol prior to testing. The protocol explains how the testing will be performed and which methods will be used. IDEM staff review and approve the protocol before any testing is approved. IDEM believes this is sufficient to ensure that the appropriate test method is utilized.

No changes have been made as a result of this comment.

Request for a public hearing:

Berger & Berger, representing the Plumbers and Steamfitters, Local Union No. 157 (the union) requested that OAQ conduct a public hearing for public comments to be taken in this matter.

Response to request for a public hearing:

Public hearings on these types of permits are discretionary under Indiana law. The only other comments that the OAQ received were from the applicant. OAQ did not receive any other requests for a public hearing.

The union's comments have been addressed in writing as part of the final decision. Therefore the OAQ elected to not hold a public hearing to address these comments.

Upon further review, the OAQ has decided to make the following revisions to the permit:

1. Conditions D.2.11 and D.3.15 have been revised as follows to require testing only for the major HAP from this source (Acetaldehyde):

D.2.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to verify compliance with Conditions D.2.5 and D.2.6, the Permittee shall perform VOC (including emission rate, and overall control efficiency) and ~~HAP~~**Acetaldehyde** testing for scrubber CE004 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.

D.3.15 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11][326 IAC 2-2][40 CFR 60, Subpart Db]

(a) In order to demonstrate compliance with Conditions D.3.5, D.3.6, D.3.11, and D.3.12, the Permittee shall perform PM, PM10, VOC (including emission rate and overall control efficiency), NOx, SO_2, CO, and ~~HAP~~**Acetaldehyde** testing for the TO/HRSG systems stack (EP003) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. These tests shall be repeated at least once every five (5) years from the date

of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

. . .

2. There are no specific HAP emission limits for the ethanol loading rack. Therefore, no stack testing is required for HAP emissions from the ethanol loading rack. The condition numbers referred to in Condition D.4.11 are incorrect. Therefore, Condition D.4.11 has been revised as follows:

D.4.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]

In order to demonstrate compliance with Conditions D.5~~4~~.5 and D.5~~4~~.6, the Permittee shall perform VOC (including emission rate and overall control efficiency), ~~HAP,~~ CO, and NOx testing for enclosed flare CE009 within 60 days after achieving the maximum production, 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.

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:	ASA Linden, LLC
Source Location:	173 West County Road 1100 North, Linden, Indiana 47955
County:	Montgomery
SIC Code:	2869
Operation Permit No.:	F107-21453-00061
Permit Reviewer:	ERG/YC

The Office of Air Quality (OAQ) has reviewed a New Source Review and FESOP application from ASA Linden, LLC relating to the construction and operation of an ethanol production plant.

Source Definition

The following two (2) companies will be located at the same location (173 West County Road 1100 North, Linden, Indiana 47955):

(a) Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), an existing grain elevator (SIC 5153), which started operation in 1972.

(b) ASA Linden, LLC (Plant ID #107-00061), a new ethanol production plant (SIC 2869). All the grain received at the ethanol plant will be from Cargill AgHorizons - Linden Grain Elevator.

Since these two (2) plants will be located on the same property and will have a supporting relationship, IDEM, OAQ has determined that these two (2) plants should be considered one (1) single source. Separate FESOPs will be issued to Plant #107-00009 and #107-00061 solely for administrative purposes. This permit covers the ASA Linden ethanol plant.

Permitted Emission Units and Pollution Control Equipment

There are no permitted emission units at the ASA Linden plant during this review process.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at the ASA Linden plant during this review process. Unpermitted emission units located at the Cargill AgHorizons plant are described in permit 107-21971-00009.

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) corn conveyor, identified as EU001, constructed in 2005, with a maximum throughput rate of 420 tons of corn per hour, controlled by baghouse CE001, with emissions exhausted through stack EP001.

(b) Four (4) hammermills, identified as EU002 through EU005, constructed in 2005, each with a maximum throughput rate of 36 tons of corn per hour, controlled by baghouse CE002, with emissions exhausted through stack EP002.

(c) One (1) fermentation process, constructed in 2005, with a maximum throughput rate of 13,470 gallons of ethanol per hour, and consisting of the following:

(1) Seven (7) fermenters, identified as EU025 through EU031, controlled by CO_2 scrubber CE004, with emissions exhausted through stack EP004.

(2) One (1) beer well, identified as EU032, controlled by CO_2 scrubber CE004, with emissions exhausted through stack EP004.

(d) Two (2) thermal oxidizers with heat recovery steam generator (TO/HRSG) systems, identified as CE003 and CE006, constructed in 2005, each with a maximum heat input capacity of 122 MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack EP003.

(e) One (1) distillation process, constructed in 2005, with a maximum throughput rate of 13,470 gallons of ethanol per hour, controlled by the TO/HRSG systems (CE003 and CE006), with emissions exhausted through stack EP003. This process consists of the following:

(1) One (1) mixer, identified as EU006.

(2) Two (2) slurry tanks, identified as EU007 and EU008.

(3) One (1) flash tank, identified as EU009.

(4) One (1) cook cube, identified as EU010.

(5) Four (4) liquifaction tanks, identified as EU011 through EU014.

(6) Two (2) yeast tanks, identified as EU015 and EU016.

(7) One (1) beer column, identified as EU017.

(8) One (1) side stripper, identified as EU018.

(9) One (1) rectifier column, identified as EU019.

(10) One (1) 190 proof condenser, identified as EU020.

(11) Molecular sieves, identified as EU021.

(12) One (1) 200 proof condenser, identified as EU022.

(f) Two (2) natural gas fired DDGS dryers, identified as EU039 and EU040, constructed in 2005, each with a maximum heat input rate of 45 MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by the multicyclones C60 and C61 and the TO/HRSG system CE003, with emissions exhausted to stack EP003.

(g) Two (2) natural gas fired DDGS dryers, identified as EU042 and EU043, constructed in 2005, each with a maximum heat input rate of 45 MMBtu/hr and a maximum throughput rate of 25 tons/hr of DDGS, controlled by multicyclones C70 and C71 and the TO/HRSG system CE006, with emissions exhausted to stack EP003.

(h) One (1) DDGS cooling drum, identified as EU046, constructed in 2005, with a maximum throughput rate of 100 tons/hr of DDGS, controlled by the TO/HRSG systems CE003 and CE006, and exhausting to stack EP003. Up to 5% bypass of the exhaust is controlled by baghouse CE008 which exhausts to stack EP007.

(i) One (1) DDGS handling and loadout operation, constructed in 2005, with a maximum throughput rate of 120 tons/hr of DDGS, controlled by baghouse CE005, with emissions exhausted to stack EP005, and consisting of the following:

(1) Two (2) DDGS storage bins, identified as EU035;

(2) One (1) DDGS conveyor, identified as EU036; and

(3) One (1) DDGS truck/rail loadout spout, identified as EU037.

(j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU047, constructed in 2005, with a maximum throughput rate of 48,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. The truck loading process is controlled by the enclosed flare CE009, which has a maximum heat input capacity of 6.4 MMBtu/hr, and exhausts through stack EP008.

Insignificant Activities

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

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

(b) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

(c) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(d) Forced and induced draft cooling tower system not regulated under a NESHAP, including a cooling tower which has a maximum flow rate of 55,000 gallons per minute.

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

(f) Heat exchanger cleaning and repair.

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

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

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

(j) Stationary fire pumps, including one (1) diesel fire pump, identified as EU048, constructed in 2005, with a maximum power output rate of 290 horsepower, and exhausting to stack EP009.

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

(12.5) pounds per day or two and five tenths (2.5) tons per year of any combination of HAPs:

(1) Two (2) denatured ethanol storage tanks, identified as T001 and T002, constructed in 2005, each with a maximum capacity of 1,500,000 gallons.

(2) One (1) 200 proof storage tank, identified as T003, constructed in 2005, with a maximum capacity of 200,000 gallons.

(3) One (1) denaturant storage tank, identified as T004, constructed in 2005, with a maximum capacity of 200,000 gallons.

(4) One (1) 190 proof storage tank, identified as T005, constructed in 2005, with a maximum capacity of 200,000 gallons.

(5) One (1) fuel additive storage tank, identified as T006, constructed in 2005, with a maximum capacity of 2,300 gallons.

(6) One (1) methanator, constructed in 2005, controlled by 6.4 MMBtu/hr biomethanator flare CE007, and exhausting to stack EP006.

Existing Approvals

There are no previous air approvals issued to the existing grain elevator plant (#107-00009) or the new ethanol production plant (#107-00061).

Enforcement Issue

There are no enforcement actions pending for ASA Linden, LLC (Plant #107-00061). The enforcement issue for plant #107-00009 will be discussed in the TSD for the pending permit #107-21971-00009 for Cargill AgHorizons.

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 June 17, 2005. Additional information was received on September 20, 2005, October 28, 2005, November 1, 2005, November 2, 2005, and November 10, 2005.

There was no notice of completeness letter mailed to the source.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 15). The PTE for the storage tanks is 1.16 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 for Plant #107-00061 (tons/yr)	Potential to Emit for Plant #107-00009* (tons/yr)	Potential to Emit for the Entire Source (tons/yr)
PM	Greater than 100	172	Greater than 100
PM10	Greater than 100	82.0	Greater than 100
SO_2	67.1	0.09	67.1
VOC	Greater than 100	0.79	Greater than 100
CO	Greater than 100	12.1	Greater than 100
NO_x	Greater than 100	14.4	Greater than 100

HAPs	Potential to Emit for Plant #107-00061 (tons/yr)	Potential to Emit for Plant #107-00009* (tons/yr)	Potential to Emit for the Entire Source (tons/yr)
Acetaldehyde	13.5	-	13.5
Acrolein	0.24	-	0.24
Formaldehyde	1.75	Negligible	1.75
Methanol	1.47	-	1.47
Hexane	3.34	Negligible	3.34
n-Hexane	4.02	-	4.02
Benzene	0.20	-	0.20
Other HAPs	Negligible	Negligible	Negligible
Total	Greater than 25	Negligible	Greater than 25

*Note: The PTE for Plant #107-00009 is from the draft TSD for FESOP #107-21971-00009. This permit is currently being reviewed and has not yet been issued.

(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 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.

	Potential To Emit (tons/year)						
Process/Emission Unit	PM	PM-10	SO_2	VOC	CO	NO_x	HAPs
Grain Handling Operations	Less than 7.94	Less than 7.77	-	-	-	-	-
Fermentation Process and Distillation Process	-	-	-	Less than 44.7	-	-	Less than 5.50
Distillation, DDGS Dryers, TO/HRSG Systems, and DDGS Cooling Drum	Less than 39.4	Less than 39.4	Less than 67.0	Less than 37.2	Less than 93.7	Less than 92.9	Less than 9.58
DDGS Cooling Drum Bypass	Less than 0.01	Less than 0.01	-	1.31	-	-	Negligible
DDGS Handling and Loadout Operations	Less than 0.16	Less than 0.08	-	1.05	-	-	0.08
DDGS Loadout (Fugitive)	Less than 0.12	Less than 0.03	-	-	-	-	-
Ethanol Loading Rack	Negligible	Negligible	Negligible	Less than 1.61	Less than 2.43	Less than 1.04	Less than 0.09
Paved Roads (Fugitive)	Less than 7.62	Less than 1.48	-	-	-	-	-
Cooling Tower (Insignificant)	15.1	15.1	-	-	-	-	-
Emergency Generator (Insignificant)	0.08	0.08	0.07	0.09	0.24	1.12	Negligible
Storage Tanks (Insignificant)	-	-	-	1.16	-	-	Negligible
Equipment Leaks (Fugitive)	-	-	-	7.11	-	-	0.42
Biomethanator Flare (Insignificant)	-	-	-	**	**	**	-
Total PTE of Plant #107-00061	Less than 70.4	Less than 64.0	Less than 67.1	Less than 94.2	Less than 96.4	Less than 95.1	Less than 8.33 for a single HAP and 15.7 for total HAPs
Total PTE of Plant #107-00009*	Less than 22.6	Less than 9.13	Less than 0.02	Less than 0.22	Less than 3.36	Less than 4.00	Negligible
Total PTE of the Entire Source	Less than 93.0	Less than 73.1	Less than 67.1	Less than 94.4	Less than 99.8	Less than 99.1	Less than 8.33 for a single HAP and 15.7 for total HAPs
PSD/TV Major Thresholds	100	100	100	100	100	100	10 for a single HAP and 25 for total HAPs

Note: "-" pollutant not emitted by the facility.

* The PTE for Plant #107-00009 is from the draft permit application for FESOP #107-21971-00009. This permit is currently being reviewed and has not yet been issued.

** Biomenthanator flare will not operate when any of the DDGS dryers is in operation. The emissions from the DDGS dryers are the worst case scenario. Therefore, the PTE of the biomethanator flare is not included in the PTE for the entire source.

County Attainment Status

The source is located in Montgomery County.

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

(a) Volatile organic compounds (VOC) and Nitrogen Oxides 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. Montgomery County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) Montgomery County has been classified as unclassifiable or attainment for PM 2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM 2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM 2.5 emissions.

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

Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Potential to Emit for Plant #107-00061 (tons/yr)	Potential to Emit for Plant #107-00009* (tons/yr)	Potential to Emit for the Entire Source (tons/yr)
PM	Less than 70.4	Less than 20.5	Less than 100
PM-10	Less than 64.0	Less than 7.92	Less than 100
SO_2	67.1	Less than 0.02	67.1
VOC	Less than 94.2	Less than 0.22	Less than 100
CO	Less than 97.4	Less than 3.36	Less than 100
NO_x	Less than 95.3	Less than 4.00	Less than 100
A single HAP	Less than 10	Negligible	Less than 10
Combination HAPs	Less than 25	Negligible	Less than 25

*Note: The PTE for Plant #107-00009 is from the draft permit for FESOP #107-21971-00009. This permit is currently being reviewed and has not yet been issued.

This existing source is not a PSD major stationary source because no regulated pollutant is emitted at a rate of 100 tons per year or greater and it is in one of the 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 thermal oxidizer/heat recovery steam generator (TO/HRSG) systems (CE003 and CE006) are also 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, the TO/HRSG systems CE003 and CE006 are subject to the New Source

Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40b-49b, Subpart Db).

Since the TO/HRSG systems use natural gas and the process emissions from the DDGS dryers as fuels, there are no applicable SO_2 and PM emission limits for this unit in 40 CFR 60, Subpart Db. Pursuant to 40 CFR 60.44b, the NOx emissions from the TO/HRSG systems (CE003 and CE006) shall not exceed 0.1 lbs/MMBtu.

Since each of the TO/HRSG systems (CE003 and CE006) has a maximum heat input capacity less than 250 MMBtu/hr and uses natural gas as supplemental fuel, the Permittee shall comply with one of the following monitoring requirements:

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

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

The Permittee has proposed to install a NOx continuous emission monitoring system (CEMS) with the TO/HRSG systems stack (EP003) to demonstrate compliance with this NSPS.

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

(c) Tanks T001 through T005 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). Tank T006 has a maximum capacity less than 75 cubic meters (19,813 gallons) and therefore is not subject to this NSPS.

Tanks T001 through T005 have capacities greater than 151 cubic meters (39,890 gallons) and the stored liquids have vapor pressures greater than 5.2 kPa and less than 76.6 kPa. Therefore, these tanks are subject to the requirements in 40 CFR 60.112b(a). The Permittee has elected to install internal floating roofs with these fixed roof tanks and shall comply with the following requirements in 40 CFR 60.112b(a)(1):

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

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

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

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage

vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

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

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

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

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

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

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

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

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

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

(d) Ethanol is one of the chemicals listed in 40 CFR 60.489. Therefore, this ethanol production plant is subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (326 IAC 12, 40 CFR 60.480 - 489, Subpart VV).

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

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

(2) Compliance with 40 CFR 60.482–1 to 60.482–10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in 40 CFR 60.485.

(3) The Permittee may request a determination of equivalence of a means of emission limitation to the requirements of 40 CFR 60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, and 60.482–10 as provided in 40 CFR 60.484.

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

The specific requirements for pumps, compressors, pressure relief devices, sampling connection systems, and valves are listed in the permit. The Permittee shall also comply with the testing requirements in 40 CFR 60.485, the recordkeeping requirements in 40 CFR 60.486, and the reporting requirements in 40 CFR 60.487.

(e) Ethanol is one of the chemicals listed in 40 CFR 60.667. However, according to the EPA 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).

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

(g) This source will comply with the FESOP limits to limit the HAP emissions from the entire source to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the 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.

(h) 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.

(i) 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).

(j) This existing source is a minor source of HAPs. Therefore, the cooling towers at this source are not subject to the NESHAP for Industrial Process Cooling Towers (40 CFR 63, Subpart Q).

(k) This existing source is a minor source of HAPs. Therefore, this source is not subject to the requirements of the NESHAP for Organic Liquids Distribution (non-gasoline) (40 CFR 63, Subpart EEEE).

(l) This existing source is a minor source of HAPs. Therefore, this source is not subject to the requirements of the NESHAP for Miscellaneous Organic Chemical Manufacturing (40 CFR 63, Subpart FFFF).

State Rule Applicability – Entire Source

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

This source was constructed in 1972 and will be modified in 2005. The source belongs to the chemical plant source categories defined in 326 IAC 2-2-1(y)(1) and the potential to emit PM, PM10, VOC, CO, and NOx from the entire source before control is greater than 100 tons/yr.

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

(a) The PM emissions from the grain receiving, handling, and DDGS handling and loadout operations shall not exceed the emission limits listed in the table below:

Unit Description	Baghouse ID	PM Emission Limit (lbs/hr)
Corn Conveyor	CE001	0.26
Hammermills	CE002	1.73
DDGS Handling and Loadout Operations	CE005	0.11

The use of baghouses CE001, CE002, and CE005 is necessary to demonstrate compliance with the PM limits above.

(b) The total grain received by corn conveyor EU001 shall not exceed 1,260,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total DDGS produced shall not exceed 370,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

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

(e) The PM emissions from the TO/HRSG stack EP003 shall not exceed 9.0 lbs/hr.

Combined with the PM emissions from other PM emission units and the PM emissions from Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), the PM emissions from the entire source are limited to less than 100 tons/yr.

The source has also accepted limits on the PM10, VOC, CO, and NOx emissions from the entire source, which will limit emissions of these pollutants to less than 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)

This source was constructed in 1972 and will be modified in 2005. The source will accept FESOP limits on the HAP emissions from the entire source, such that the emissions from the source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for any combination of HAPs (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-4.1 are not applicable.

326 IAC 2-8-4 (FESOP)

The potential to emit PM10, VOC, CO, and NOx before control of the entire source is greater than 100 tons/yr. In addition, the potential to emit HAP before control from this source is greater than

10 tons/yr for a single HAP and greater than 25 tons/yr for total HAPs. Pursuant to 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

(a) 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 Description	Baghouse ID	PM10 Emission Limit (lbs/hr)
Corn Conveyor	CE001	0.14
Hammermills	CE002	1.73
DDGS Handling and Loadout Operations	CE005	0.05

The use of baghouses CE001, CE002, and CE005 is necessary to demonstrate compliance with the PM10 limits above.

(b) The total grain received by corn conveyor EU001 shall not exceed 1,260,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total DDGS produced shall not exceed 370,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

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

(e) The emissions from wet scrubber CE004, which is used to control the emissions from the fermentation process, shall comply with the following:

(1) VOC emissions shall not exceed 10.2 lbs/hr.

(2) Acetaldehyde emissions shall not exceed 1.18 lbs/hr.

(3) Total HAP emissions shall not exceed 1.26 lbs/hr.

(f) The TO/HRSG systems (CE003 and CE006) are used to control the emissions from the distillation process, the DDGS dryers (EU039, EU040, EU042, and EU043), and the DDGS cooling drum (EU046). The emissions from the TO/HRSG systems stack EP003 shall comply with the following:

(1) PM10 emissions shall not exceed 9.0 lbs/hr.

(2) VOC emissions shall not exceed 8.5 lbs/hr.

(3) CO emissions shall not exceed 21.4 lbs/hr.

(4) SO_2 emissions shall not exceed 15.3 lbs/hr.

(5) NOx emissions shall not exceed 21.2 lbs/hr.

(6) Acetaldehyde emissions shall not exceed 0.72 lbs/hr.

(7) Total HAP emissions shall not exceed 2.19 lbs/hr.

(g) The Permittee shall comply with the following requirements for the ethanol loading rack EU047:

(1) The Permittee shall use flare CE009 to control the emissions from the loading rack when this unit is in operation.

(2) The denatured ethanol loadout shall not exceed 123.9 MM gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(3) NOx emissions from flare CE009 shall not exceed 0.0168 lbs/kgal of denatured ethanol loaded.

(4) CO emissions from flare CE009 shall not exceed 0.0392 lbs/kgal of denatured ethanol loaded.

(h) The Permittee shall comply with the following for the diesel fire pump (EU048):

(1) The operating hours for the diesel fire pump (EU048) shall not exceed 250 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The NOx emissions shall not exceed 8.99 lbs/hr.

(3) The CO emissions shall not exceed 1.94 lbs/hr.

(i) The biomethanator flare (CE007) shall not operate when any of the DDGS dryers (EU39, EU40, EU42, and EU43) is in operation.

Combined with the PM10, VOC, NOx, CO, and HAP emissions from other emission units and the PM10, VOC, NOx, CO, and HAP emissions from Cargill AgHorizons – Linden Grain Elevator (Plant ID #107-00009), the emissions from the entire source are limited to less than 100 tons/yr for PM10, VOC, NOx, and CO, less than 10 tons/yr for a single HAP, and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-6 (Emission Reporting)

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

326 IAC 5-1 (Opacity Limitations)

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

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

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

State Rule Applicability - Grain Handling Operations

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

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU001	Corn Conveyor	420	66.9
EU002	Hammermill	36	41.6
EU003	Hammermill	36	41.6
EU004	Hammermill	36	41.6
EU005	Hammermill	36	41.6

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

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

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

As shown in the calculations in Appendix A, the potential to emit PM after control from the corn conveyor and the hammermills is less than the emission limits above. Therefore, these operations are capable of complying with 326 IAC 6-3-2. The use of the baghouse CE002 for the hammermills is necessary to ensure compliance with the limits above.

State Rule Applicability – Fermentation Process

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

The fermentation process will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this process. Therefore, this fermentation process is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions from this process using the Best Available Control Technology (BACT). Based on the information in Appendix B, BACT for the fermentation process has been determined to be the following:

(a) The VOC emissions from the fermentation process shall be controlled by wet scrubber CE004.

(b) The overall VOC control efficiency for the wet scrubber CE004 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(c) The VOC emissions from wet scrubber CE004 shall not exceed 10.2 lbs/hr.

State Rule Applicability – Thermal Oxidizer/Heat Recovery Steam Generator (TO/HRSG) Systems (CE003 and CE006)

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

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

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

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

The total source heat input capacity is 122 x 2 = 244 MMBtu/hr. Therefore, the PM emission limit for each of the TO/HRSG systems is:

$$Pt = \frac{1.09}{244^{0.26}} = 0.26 \text{ lbs/MMBtu.}$$

A PM emission limit of 0.26 lbs/MMBtu is equivalent to 31.7 lbs/hr (0.26 lbs/MMBtu x 122 MMBtu/hr = 31.7 lbs/hr) of PM emissions from one TO/HRSG system. According to the emission calculations in Appendix A, the total PM emissions from the TO/HRSG systems CE003 and CE006 are 9.0 lbs/hr. Therefore, these units are capable of complying with the PM requirements in 326 IAC 6-2-4.

State Rule Applicability – Distillation Process

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

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

(a) The VOC emissions from the distillation process shall be controlled by the TO/HRSG system CE003 or CE006.

(b) The overall VOC control efficiency for each of the TO/HRSG systems CE003 and CE006 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the stack EP003 for the TO/HRSG systems (CE003 and CE006) shall not exceed 8.5 lbs/hr.

State Rule Applicability – DDGS Drying and Cooling Process

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 (EU039, EU040, EU042, and EU043) and the DDGS cooling drum (EU046) 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)
EU039	DDGS Dryer	25.0	35.4
EU040	DDGS Dryer	25.0	35.4
EU042	DDGS Dryer	25.0	35.4
EU043	DDGS Dryer	25.0	35.4
EU046	DDGS Cooling Drum	100	51.3

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

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

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

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

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

The use of TO/HRSG systems (CE003 and CE006) is necessary to ensure compliance with the emission limits above.

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

The DDGS dryers (EU039, EU040, EU042, and EU043) will be constructed after January 1, 1980 and each of them has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to these dryers. Therefore, these dryers are subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions using the Best Available Control Technology (BACT). Based on the information in Appendix B, BACT for the DDGS dryers has been determined to be the following:

(a) The VOC emissions from the DDGS dryers (EU039, EU040) shall be controlled by the TO/HRSG system CE003.

(b) The VOC emissions from the DDGS dryers (EU042, EU043) shall be controlled by the TO/HRSG system CE006.

(c) The overall efficiency for each of the TO/HRSG systems CE003 and CE006 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(d) The VOC emissions from stack EP003 for the TO/HRSG systems (CE003 and CE006) shall not exceed 8.5 lbs/hr.

The potential VOC emissions from the DDGS cooling drum (EU046) are less than 25 tons/yr. Therefore, the DDGS cooling drum (EU046) is not subject to the requirements of 326 IAC 8-1-6 (BACT).

State Rule Applicability - DDGS Handling and Loadout Operation

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

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU035	DDGS Storage	120	53.1
EU036	DDGS Conveyor	120	53.1
EU037	DDGS Loadout	120	53.1

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

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

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

As shown in the calculations in Appendix A, the potential to emit PM before control from the DDGS storage, conveyor, and loadout operation is less than the emission limits above. Therefore, these operations are capable of complying with 326 IAC 6-3-2 without the use of control devices.

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

The potential VOC emissions from the each of the DDGS storage and handling operations are less than 25 tons/yr. Therefore, the requirements of 326 IAC 8-1-6 (BACT) are not applicable to these units.

State Rule Applicability – Ethanol Loading Rack (EU047)

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

The ethanol loading rack at this source will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8

applicable to this unit. Therefore, this unit is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions with the Best Available Control Technology (BACT). Based on the information provided in Appendix B, BACT for this ethanol loading rack (EU047) has been determined to be the following:

(a) The VOC emissions from the ethanol loading rack (EU047) shall be collected and controlled by enclosed flare CE009 when the ethanol loading rack is in operation.

(b) The overall efficiency for the enclosed flare CE009 (including the capture efficiency and destruction efficiency) shall be at least 98%.

(c) The VOC emissions from the flare CE009 shall not exceed 1.25 lbs/hr. This limit was calculated based on the VOC emission factor of 1.30 lbs/kgal, the maximum truck loadout rate of 48 kgal/hr, and the flare control efficiency of 98% (1.30 lbs/kgal x 48 kgal/hr x (1-98%) = 1.25 lbs/hr). The VOC emission factor of 1.30 lbs/kgal was calculated using the equation in AP-42, Chapter 5.2 (see the emission calculations in Appendix A).

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 – Paved Roads (Insignificant Activities)

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Emissions Limitations)

The potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the paved roads at this source are less than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are not applicable.

State Rule Applicability – Storage Tanks T001 through T006 (Insignificant Activities)

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

The denaturant storage tank (T004) 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 T004 is subject to the requirements of 326 IAC 8-4-3. Tank T004 will be equipped with an internal floating roof. Pursuant to 326 IAC 8-4-3(d), the Permittee shall maintain the following records for a period of two (2) years for tank T004:

(a) The types of volatile petroleum liquid stored;

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

(c) 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 T001, T002, T003, T005, and T006 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.

State Rule Applicability – Diesel Fire Pump (Insignificant Activity)

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 diesel fire pump (EU048) 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 diesel fire pump (EU048) is not subject to the requirements of 326 IAC 10-1.

Testing Requirements

In order to demonstrate compliance with the FESOP, PSD minor limits, and 40 CFR 60, Subpart Db, 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 (#107-00061):

(a) PM and PM10 tests for baghouses CE001, CE002, and CE005, which are used to control the particulate emissions from the corn conveyor (EU001), the hammermills (EU002 through EU005), and DDGS handling and loadout operation (EU035 through EU037).

(b) VOC and HAP tests for scrubber CE004, which is used to control the fermentation process.

(c) PM, PM10, VOC, NOx, CO, SO_2, and HAP tests for the TO/HRSG systems stack EP003. The TO/HRSG systems (CE003 and CE006) are used to control the emissions from the distillation process, the DDGS dryers (EU039, EU040, EU042, and EU043), and the DDGS cooling drum (EU046).

(d) VOC, NOx, CO, and HAP emissions from the enclosed flare CE009, which is used to control the emissions from the ethanol loading rack.

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs, IDEM, OAQ in conjunction with the source must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the approporiate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

1. The corn conveyor (EU001), the hammermills (EU002 through EU005), and the DDGS handling and loadout operations (EU035 through EU037) have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses CE001, CE002, and CE005.

(a) Visible emission notations of the baghouse stack exhausts (stacks EP001, EP002, and EP005) 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. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee 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. Section C - Response to Excursions or Exceedances for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(b) The Permittee shall record the pressure drop across baghouses CE001, CE002, and CE005 used in conjunction with the corn conveyor (EU001), the hammermills (EU002 through EU005), and the DDGS handling and loadout operations (EU035 through EU037), at least once per day. When for any one reading, the pressure drop across baghouses CE001, CE002, and CE005 is outside the normal range of 1.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. 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.

(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 corn conveyor (EU001), the hammermills (EU002 through EU005), and the DDGS handling and loadout operations (EU035 through EU037), 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 wet scrubber CE004, which is used to control the fermentation process, has applicable compliance monitoring conditions as specified below:

   The Permittee shall monitor and record the pressure drop and flow rate of scrubber CE005, at least once per day when the associated fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 6.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of any of the scrubbers is less than the minimum of 40 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 mention range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

   [Note: There are no PM/PM10 emissions from the fermentation process. Therefore, visible emissions notations are not required for this process.]

   These monitoring conditions are necessary because scrubber CE004 for the fermentation process must operate properly to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-1-6 (BACT).

3. The distillation process, the DDGS dryers (EU039, EU040, EU042, and EU043), and the DDGS cooling drum (EU046), which are controlled by the TO/HRSG systems (CE003 and CE006), have applicable compliance monitoring conditions as specified below:

   (a) Visible emission notations of the exhaust from stack EP003 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. For processes operated continuously “normal” means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee 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. Section C - Response to Excursions or Exceedances for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

   (b) A continuous monitoring system shall be calibrated, maintained, and operated on each of the TO/HRSG systems (CE003 and CE006) 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.

   (c) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM.

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

(e) The Permittee shall determine fan amperage or duct pressure from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM, OAQ.

(f) The duct pressure or fan amperage shall be observed at least once per day when the TO/HRSG systems 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.

These monitoring conditions are necessary because the TO/HRSG systems (CE003 and CE006) must operate properly at all times the distillation process, the DDGS dryers (EU039, EU040, EU042, and EU043), and the DDGS cooling drum (EU046) are in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 8-1-6 (BACT), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

4. The ethanol loading rack (EU047), which is controlled by enclosed flare CE009, has applicable compliance monitoring conditions as specified below:

The presence of a flare flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

These monitoring conditions are necessary because flare CE009 must operate properly at all times that the ethanol loading rack (EU047) is in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-1-6 (BACT).

Conclusion

The construction and operation of this ethanol production plant shall be subject to the conditions of FESOP 107-21453-00061.

Appendix A: Emission Calculations
PM and PM10 Emissions
From the Grain Handling Operations

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Hourly Potential to Emit PM/PM10:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	PTE of PM before Control (lbs/hr)	PTE of PM10 before Control (lbs/hr)	Baghouse ID	Capture Efficiency (%)	Control Efficiency (%)	PTE of PM after Control (lbs/hr)	PTE of PM10 after Control (lbs/hr)
EU001	Grain Conveyor*	420	0.061	0.0340	25.62	14.28	CE001	100%	99%	0.26	0.14
Total for CE001										***0.26***	***0.14***
EU002	Hammermill**	36.0	1.200	1.2000	43.2	43.2	CE002	100%	99%	0.43	0.43
EU003	Hammermill**	36.0	1.200	1.2000	43.2	43.2	CE002	100%	99%	0.43	0.43
EU004	Hammermill**	36.0	1.200	1.2000	43.2	43.2	CE002	100%	99%	0.43	0.43
EU005	Hammermill**	36.0	1.200	1.2000	43.2	43.2	CE002	100%	99%	0.43	0.43
Total for CE002										***1.73***	***1.73***

*Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (03/03). The uncontrolled emission factor for hammermills = controlled emission factor hammermill / (1-99%)
**Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03).

Methodology

PTE of PM/PM10 before Control (lbs/hr) = Max. Throughput Rate (tons/hr) x Uncontrolled Emission Factor (lbs/ton)
PTE of PM/PM10 after Control (lbs/hr) = PTE of PM/PM10 before Control (lbs/hr) x Capture Efficiency x (1-Control Efficiency)

2. Annual Potential to Emit PM/PM10:

Unit ID	Unit Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)	Baghouse ID	Capture Efficiency (%)	Control Efficiency (%)	PTE of PM after Control (tons/yr)	PTE of PM10 after Control (tons/yr)
EU001	Grain Conveyor*	1,260,000	0.061	0.0340	38.4	21.4	CE001	100%	99%	0.38	0.21
EU002 - EU005	Hammermill**	1,260,000	1.200	1.2000	756	756	CE002	100%	99%	7.56	7.56
Total					**794**	**777**				**7.94**	**7.77**

*Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (03/03). The uncontrolled emission factor for hammermills = controlled emission factor hammermill / (1-99%)
**Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03).

Methodology

PTE of PM/PM10 before Control (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x 1 ton/2000 lbs
PTE of PM/PM10 after Control (tons/yr) = PTE of PM/PM10 before Control (tons/yr) x Capture Efficiency x (1-Control Efficiency)

Appendix A: Emission Calculations
VOC and HAP Emissions
From the Fermentation Process

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Process Description:

Max. Throughput Rate: 118 MM gal/yr of ethanol
Control Equipment: Wet Scrubber CE004

2. Potential to Emit (PTE) of VOC and HAP:

Pollutant	*Emission Rate after Control (lbs/hr)	PTE after Control (tons/yr)	**Control Efficiency (%)	PTE before Control (tons/yr)
VOC	10.2	**44.7**	98%	**2,234**
HAP				
Acetaldehyde	1.179	5.16	50%	10.3
Acrolein	0.0143	0.06	0%	0.06
Formaldehyde	0.031	0.14	0%	0.14
Methanol	0.031	0.14	0%	0.14
Total HAPs	**1.26**	**5.50**		**10.7**

* This is provided by the source based on multiple ethanol facilities' stack test results and scaled linearly based on production capacity. The Permittee will perform stack testing to demonstrate compliance with the above emission rates.
** The control efficiency information is based on the information from other similar plants.

Methodology

PTE after Control (tons/yr) = Emission Rate after Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs
PTE before Control (tons/yr) = PTE after Control (tons/yr) / (1- Control Efficiency)

Appendix A: Emission Calculations
Criteria Pollutants
From Four (4) 45 MMBtu/hr DDGS Dryers and Two (2) 122 MMBtu/hr TO/HRSG Systems

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

Heat Input Capacity
MMBtu/hr

424 (6 units combined)

	Pollutant					
	PM*	PM10*	SO_2*	NOx*	VOC*	CO*
Emission Factor	9.0 (lbs/hr)	9.0 (lbs/hr)	15.3 (lbs/hr)	21.2 (lbs/hr)	8.50 (lbs/hr)	21.3 (lbs/hr)
Potential to Emit in tons/yr	**39.4**	**39.4**	**67.0**	**92.9**	**37.2**	**93.3**

*Emission rates were estimated by the source based on the stack testing results from similar sources. These emission rates are the proposed emission limits in this permit and will be verified by stack testing.

Methodology

PTE (tons/yr) = Emission Factor (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

Appendix A: Emission Calculations
HAP Emissions
From Four (4) 45 MMBtu/hr DDGS Dryers and Cooling Drum

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

Heat Input Capacity
MMBtu/hr

180 (4 units combined)

	Pollutant				
	Acetaldehyde	Acrolein	Formaldehyde	Methanol	Total
Emission Rate after Control (lbs/hr) *	0.72	0.04	0.32	0.30	1.39
PTE after Control in tons/yr	**3.17**	**0.18**	**1.41**	**1.33**	**6.08**

*HAP emission rates were estimated by the source based on the stack testing results from a similar engineered site (Glacial Lakes Energy, MN). The Permittee will perform stack tests to verify the HAP emissions from these units.

Methodology

PTE after Control (tons/yr) = Emission Rate after Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

Appendix A: Emission Calculations
HAP Emissions
From NG Combustion in Four (4) 45 MMBtu/hr DDGS Dryers and Two (2) 122 MMBtu/hr TO/HRSG Systems

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

Heat Input Capacity MMBtu/hr		Potential Throughput MMCF/yr
424	(6 units combined)	3714.2

	Pollutant					
Emission Factor in lbs/MMCF	Hexane 1.8E+00	Formaldehyde 7.5E-02	Toluene 3.4E-03	Benzene 2.1E-03	Nickel 2.1E-03	**Total HAPs**
Potential to Emit in tons/yr	**3.34**	**0.14**	**6.31E-03**	**3.90E-03**	**3.90E-03**	**3.50**

Emission factors are from AP-42, Chapter 1.4, Table 1.4-3 (AP-42, 03/98).
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Methodology

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
PTE (tons/yr) = Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2000 lbs

Appendix A: Emission Calculations
PM and PM10 Emissions
From the DDGS Handling and Loadout Operations

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Hourly Potential to Emit PM/PM10:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	PTE of PM before Control (lbs/hr)	PTE of PM10 before Control (lbs/hr)	Baghouse ID	Capture Efficiency (%)	Control Efficiency (%)	PTE of PM after Control (lbs/hr)	PTE of PM10 after Control (lbs/hr)
EU035	DDGS Storage*	120	0.0250	0.0063	3.00	0.76	CE005	100%	99%	0.03	7.56E-03
EU036	DDGS Conveyor*	120	0.0610	0.0340	7.32	4.08	CE005	100%	99%	0.07	0.04
EU037	DDGS Loadout**	120	0.0033	0.0008	0.40	0.10	CE005	80%	99%	0.00	0.00
Total for CE003										0.11	0.05

*Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (03/03). The uncontrolled emission factor = controlled emission factor / (1-control efficiency)
**Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03), SCC 3-02-008-03.

Methodology

PTE of PM/PM10 before Control (lbs/hr) = Max. Throughput Rate (tons/hr) x Uncontrolled Emission Factor (lbs/ton)
PTE of PM/PM10 after Control (lbs/hr) = PTE of PM/PM10 before Control (lbs/hr) x Capture Efficiency x (1-Control Efficiency)

2. Annual Potential to Emit PM/PM10:

Unit ID	Unit Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)	Baghouse ID	Capture Efficiency (%)	Control Efficiency (%)	PTE of PM after Control (tons/yr)	PTE of PM10 after Control (tons/yr)
EU035	DDGS Storage*	370,000	0.0250	0.0063	4.63	1.17	CE005	100%	99%	0.05	0.01
EU036	DDGS Conveyor*	370,000	0.0610	0.0340	11.3	6.29	CE005	100%	99%	0.11	0.06
EU037	DDGS Loadout **	370,000	0.0033	0.0008	0.61	0.15	CE005	80%	99%	4.88E-03	1.18E-03
Total					**16.5**	**7.60**				**0.16**	**0.08**

*Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (03/03). The uncontrolled emission factor = controlled emission factor / (1-control efficiency)
**Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03).

Methodology

PTE of PM/PM10 before Control (tons/yr) = Annual Throuhgput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x 1 ton/2000 lbs
PTE of PM/PM10 after Control (tons/yr) = PTE of PM/PM10 before Control (lbs/hr) x Capture Efficiency x (1-Control Efficiency)

3. Fugitive Emissions from the DDGS Loadout Operation:

Unit ID	Unit Description	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)	Baghouse ID	Capture Efficiency (%)	Fugitive PM (tons/yr)	Fugitive PM10 (tons/yr)
EU035	DDGS Storage*	4.63	1.17	CE003	100%	0.00	0.00
EU036	DDGS Conveyor*	11.3	6.29	CE003	100%	0.00	0.00
EU037	DDGS Loadout - Truck*	0.61	0.15	CE003	80%	0.12	0.03
Total						**0.12**	**0.03**

Methodology

Fugitive PM/PM10 (tons/yr) = Uncontrolled PM/PM10 (tons/yr) x (1-Capture Efficiency%)

Appendix A: Emission Calculations
PM/PM10 and VOC Emissions
From the Cooling Drum Bypass (EP007)

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

The cooling drum moves the DDGS from the dryers to the DDGS storage. This process will be controlled by the TO/HRSG systems. However, there is up to 5% of exhaust by-passing the TO/HRSG systems and this will be controlled by baghouse CE008.

Max. Throughput Rate (tons/hr)	Bypass Rate (%)
100	5%

	Pollutant		
	PM*	PM10*	VOC**
Emission Factor	0.061 (lbs/ton)	0.061 (lbs/ton)	0.06 (lbs/ton)
PTE before Control (tons/yr)	**1.34**	**1.34**	**1.31**
Control Efficiency	**99%**	**99%**	**NA**
PTE after Control (tons/yr)	**0.01**	**0.01**	**1.31**

*Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (03/03).
**Emission factor is provided by the source based on the stack testing results from a similar source in South Dakota.

Methodology

PTE before Control (tons/yr) = Max. Throughput Rate (tons/hr) x Bypass Rate (%) x Emission Factor (lbs/ton) x 8760 hr/yr x 1 ton/2000 lbs
PTE after Control (tons/yr) = Max. Throughput Rate (tons/hr) x Bypass Rate (%) x Emission Factor (lbs/ton) x 8760 hr/yr x 1 ton/2000 lbs x (1-Control Efficiency)

Appendix A: Emission Calculations
VOC and HAP Emissions
From the Wetcake Storage

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Process Description:

Max. Throughput Rate: 40 tons/hr of wetcake

2. Potential to Emit (PTE) of VOC and HAP:

Pollutant	*Emission Factor (lbs/ton)	PTE (tons/yr)
VOC	6.00E-03	**1.05**
HAP		
Acetaldehyde	5.56E-05	**0.01**
Acrolein	8.33E-06	**1.46E-03**
Formaldehyde	3.33E-04	**0.06**
Methanol	6.94E-05	**0.01**
Total HAP		**0.08**

* This is provided by the source based on the stack test results for DENCO, LLC in Morris, MN.
** The control efficiency information is based on the information from other similar plants.

Methodology

PTE (tons/yr) = Max. Throughput Rate (tons/hr) x Emission Factor (lbs/ton) x 8760 hr/yr x 1 ton/2000 lbs

Appendix A: Emission Calculations
VOC and HAP Emissions from Ethanol Loading Rack (EU047)

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Emission Factors: AP-42

Ethanol will be shipped by trucks or railcars. Railcars will be dedicated fleets, but the trucks may be used to carry gasoline prior to filling with ethanol. Railcars and trucks will be filled by submerged loading process. Both truck and railcar loading will be controlled by flare CE009 which has a control efficiency of 98% for VOC and HAPs.

According to AP-42, Chapter 5.2 - Transportation and Marketing of Petroleum Liquids (01/95), the VOC emission factors for the truck and rail loading rack can be estimated from the following equation:

$$L = 12.46 \times (SPM)/T$$

where:

L = loading loss (lbs/kgal)
S = a saturation factor (see AP-42, Table 5.2-1)
P = true vapor pressure of the liquid loaded (psia)
M = molecular weight of vapors
T = temperature of the bulk liquid loaded (degree R)

Previous Stored Liquid	*S	P (psia)	M (lbs/mole lbs)	T (degree R)	L (lbs/kgal)
Gasoline (normal)	0.6	6.2	62	514	5.59
Gasoline (clean cargo)	0.5	6.2	62	514	4.66
Denatured Ethanol (normal)	0.6	0.60	49.98	510	0.44
Denatured Ethanol (clean cargo)	0.5	0.60	49.98	510	0.37

Therefore, the emission factor for loading denatured ethanol to the trucks which stored gasoline previously
= L (gasoline, normal) - L (gasoline, clean cargo) + L (denatured ethanol, clean cargo) = 1.30 (lbs/kgal)

2. Potential to Emit VOC Before Control:

The worst case scenario is assuming that all the trucks are used to ship gasoline before filling with denatured ethanol and all the denatured ethanol is shipped by trucks.

Annual Production Limit: 123,900 kgal/yr

PTE of VOC before Control (tons/yr) = 124,000 kgal/yr x 1.30 lbs/gal x 1 ton/2000 lbs = **80.4 tons/yr**

3. Potential to Emit VOC after Control:

Annual Production Limit: 123,900 kgal/yr
Flare Control Efficiency: 98%

Limited PTE of VOC by Trucks (tons/yr) = 1.30 lbs/kgal x 123,900 kgal/yr x (1-98%) x 1 ton/2000 lbs = **1.61 tons/yr**

4. Potential to Emit HAPs:

HAP emissions are mainly from the unloading process for trucks, which may have been used to ship gasoline previously.

HAP	HAP Fraction*	PTE of HAP before Control (tons/yr)	Limited PTE of HAP after Control (tons/yr)
Benzene	2.50E-03	0.20	4.02E-03
Carbon Disulfide	2.00E-05	1.61E-03	3.22E-05
Cumene	1.00E-04	0.01	1.61E-04
Ethyl benzene	5.00E-05	4.02E-03	8.04E-05
n-Hexane	5.00E-02	4.02	8.04E-02
Toluene	5.00E-03	0.40	8.04E-03
Xylene	5.00E-04	0.04	8.04E-04
Total	**0.06**	4.68	0.09

* This is the HAP fraction for gasoline vapors.

Methodology

PTE of HAP before Control (tons/yr) = PTE of VOC before Control (tons/yr) x HAP %
Limited PTE of HAP after Control (tons/yr) = Limited PTE of VOC by Trucks (tons/yr) x HAP %

Appendix A: Emission Calculations
Combustion Emissions
From Flare CE009 for Ethanol Loading Rack (EU047)

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

Heat Input Capacity MMBtu/hr	Max. Load-out Rate kgal/hr	Annual Production Limit kgal/yr
6.4	48.0	123,900

	Pollutant					
	*PM	*PM10	*SO_2	**NO_x	***VOC	**CO
Emission Factor	NA	NA	NA	0.0168 (lbs/kgal)	-	0.0392 (lbs/kgal)
Unlimited Potential to Emit in tons/yr	**NA**	**NA**	**NA**	**3.53**	**80.4**	**8.24**
Limited Potential to Emit in tons/yr	**NA**	**NA**	**NA**	**1.04**	**1.61**	**2.43**

*PM, PM10, and SO_2 emission factors are negligible due to the smokeless design and minimal H_2S levels.
**Emission factors for NO_x and CO are provided by the source based on the test results for a similar source.
*** VOC emission calculations can be found in page 9 of this appendix.

Methodology

PTE of PM/PM10 and SO_2 (tons/yr) = Max. Heat Input (MMBtu/hr) x 1 MMCF/1,000 MMBtu x Emission Factor (lbs/MMCF) x 8760 hr/yr x 1 ton/2000 lbs
Unlimited PTE of NOx and CO (tons/yr) = Max. Load-out Rate (kgal/hr) x Emission Factor (lbs/kgal) x 8760 hr/yr x 1 ton/2000 lbs
Limited PTE of NOx and CO (tons/yr) = Annual Production Limit (kgal/yr) x Emission Factor (lbs/kgal) x 1 ton/2000 lbs
Limited PTE of PM/PM10 and SO_2 (tons/yr) = Unlimited PTE (tons/yr) x Annual Production Limit (kgal/yr) / (Max. Load-out Rate kgal/hr x 8760 hr/yr)

Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E =	emission factor (lb/vehicle mile traveled)		
sL =	road surface silt loading (g/m^2) =	0.6	(g/m^2) (AP-42, Table 13.2.1-3)
w =	mean vehicle weight (tons) =	29.0	tons
k =	empirical constant =	0.082 for PM and 0.016 for PM10	
a =	empirical constant =	0.65	
b =	empirical constant =	1.5	
C =	emission factor for exhaust, brake and tire wear	0.00047 for PM and PM10	
p =	number of days per year with 0.01 inches precipitation	120	

PM Emission Factor = $(0.082 \times (7.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **1.03** lbs/mile

PM10 Emission Factor = $(0.016 \times (7.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.20** lbs/mile

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	*Ave Weight of Vehicles (tons)	*Trip Number (trips/yr)	* Round Trip Distance (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)
DDGS Load Out	29	14,814	0.95	14,073	47.7%	13.84	7.27	1.42
Ethanol Load Out	29	15,488	0.95	14,714	49.9%	14.47	7.61	1.48
Denaturant Delivery	29	738	0.95	701	2.38%	0.69	0.36	0.07
Total				**29,488**	**100%**	**29.0**	**15.2**	**2.97**

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/yr) x Round-Trip Distance (mile/trip)
Traffic Component (%) = VMT / Total VMT
Component Vehicle Weight = Ave. Weight of Vehicles (ton) x Traffic Component (%)
PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source proposed to use periodic sweeping to control the fugitive dust emissions.
The control efficiency from sweeping is assumed to be 50%.

PTE of PM after Control = 15.2 tons/yr x (1-50%) = **7.62 tons/yr**

PTE of PM10 after Control = 2.97 tons/yr x (1-50%) = **1.48 tons/yr**

Appendix A: Emission Calculations
PM/PM10 Emissions
From the the Cooling Tower (Insignificant Activity)

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Process Description:

Type of Cooling Tower:	Induced Draft	
Circulation Flow Rate:	55,000	gal/min
Total Drift:	0.005%	of the circulating flow
Total Dissolved Solids:	2,500	ppm
Density:	8.345	lbs/gal

Note: The information above was provided by the cooling tower manufacturer for the same units located at a similar source.

2. Potential to Emit PM/PM10:

Assume all the dissolved solids become PM10 emissions and assume PM emissions are equal to PM10 emissions.

PTE of PM/PM10 (lbs/hr) = 55,000 gal/min x 60 min/hr x 0.005% x 8.345 lbs/gal x 2,500 ppm x 1/1,000,000 ppm = **3.44 lbs/hr**

PTE of PM/PM (tons/yr) = 3.44 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs = **15.1 tons/yr**

Appendix A: Emission Calculations
Internal Combustion Engines
From the Diesel Fire Pump EU048 (Insignificant)

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

Power Output Horse Power (HP)	Operation Limit hr/yr
290	250

	Pollutant					
	PM*	PM10*	SO_2	NO_x	**VOC	CO
Emission Factor in lb/HP-hr	2.20E-03	2.20E-03	2.05E-03	3.10E-02	2.47E-03	6.68E-03
Potential to Emit in tons/yr	**0.08**	**0.08**	**0.07**	**1.12**	**0.09**	**0.24**

*Assume PM10 emissions are equal to PM emissions.
** Assume TOC (total organic compounds) emissions are equal to VOC emissions.
Emission factors are from AP-42, Chapter 3.3, Table 3.3-1, SCC #2-02-001-02 and 2-03-001-01 (AP-42 Supplement B, 10/96).

Methodology

PTE (tons/yr) = Power Output (HP) x Emission Factor (lb/HP-hr) x Operation Limit (hr/yr) x 1 ton/2000 lbs

Appendix A: Emission Calculations
VOC and HAP Emissions
From Equipment Leaks

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

1. Fugitive VOC Emissions:

Process Stream	Equipment Component Source	Product	Component Count*	Emission Factor** (lbs/comp-hr)	Subpart VV Control Effectiveness*** (%)	TOC Weight**** (%)	Fugitive VOC Emissions (tons/yr)
Fermentation	Valves	Gas/Vapor	0	0.01319	87%	13%	0.00
	Valves	Light Liquid	146	0.00891	84%	13%	0.12
	Pumps	Gas/Vapor	12	0.04398	69%	13%	0.09
	Pressure-Relief Valves	Gas/Vapor	8	0.22984	87%	13%	0.14
	Open-Ended Lines	All	14	0.00376	0%	13%	0.03
	Flanges	All	164	0.00404	0%	13%	0.38
Distillation	Valves	Gas/Vapor	206	0.01319	87%	81.7%	1.26
	Valves	Light Liquid	0	0.00891	84%	81.7%	0.00
	Pumps	Gas/Vapor	9	0.04398	69%	81.7%	0.44
	Pressure-Relief Valves	Gas/Vapor	1	0.22984	87%	81.7%	0.11
	Open-Ended Lines	All	70	0.00376	0%	81.7%	0.94
	Flanges	All	115	0.00404	0%	81.7%	1.66
Tank Farm	Valves	Gas/Vapor	0	0.01319	87%	100%	0.00
	Valves	Light Liquid	53	0.00891	84%	100%	0.33
	Pumps	Gas/Vapor	5	0.04398	69%	100%	0.30
	Pressure-Relief Valves	Gas/Vapor	0	0.22984	87%	100%	0.00
	Open-Ended Lines	All	14	0.00376	0%	100%	0.23
	Flanges	All	61	0.00404	0%	100%	1.08
Total			**878**				**7.11**

* Component count estimated based on Subpart VV equipment inventory from VeraSun Energy, Watertown, SD for a 100 million gallons per year plant.

** 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.

**** TOC weight % is the worst case for each process stream identified.

Methodology

Fugitive VOC Emissions (tons/yr) = Component Count x Emission Factor (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs x (1-Control Effectiveness) x TOC Weight %

2. Fugitive HAP Emissions:

HAP	HAP Fraction*	Fugitive HAP Emissions (tons/yr)
Acetaldehyde	2.00E-04	1.42E-03
Methanol	2.00E-04	1.42E-03
Benzene	2.50E-03	1.78E-02
Carbon Disulfide	2.00E-05	1.42E-04
Cumene	1.00E-03	7.11E-03
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
Total		**0.42**

* This is the HAP fraction for gasoline vapors or from test results.

Methodology

Fugitive HAP Emissions (tons/yr) = Fugitive VOC Emissions (tons/yr) x HAP Fraction

Appendix A: Emission Calculations
Combustion Emissions
From Biomethanator Flare CE007

Company Name: ASA Linden, LLC
Address: 173 West County Road 1100 North, Linden, IN 47955
FESOP: 107-21453-00061
Reviewer: ERG/YC
Date: November 10, 2005

Max. Heat Input MMBtu/hr
6.4

	Pollutant						
	PM[b]	PM10[b]	SO_2[b]	NOx[a]	CO[a]	VOC[a]	HAP[b]
Emission Factor in lb/MMBtu	-	-	-	0.068	0.37	0.052	-
PTE (tons/yr)	Negligible	Negligible	Negligible	**1.91**	**10.4**	**1.46**	Negligible

[a] Emission factors are from AP-42, Tables 13.5-1 and 13.5-2 (AP-42, 01/95).

[b] The Permitttee stated that PM/PM10 emissions from this flare are negligibe due to the smokeless design. The PTE of SO_2 and HAP are negligible due to negligible sulfur and HAP presence in the gas stream.

Methodology

PTE (tons/yr) = Max. Heat Input (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2000 lbs

Appendix B
Best Available Control Technology (BACT) Determinations

Source Background and Description

Source Name:	ASA Linden, LLC
Source Location:	173 West County Road 1100 North, Linden, Indiana 47955
County:	Montgomery
SIC Code:	2869
Operating Permit No.:	F107-21453-00061
Permit Reviewer:	ERG/YC

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) reviews for a new ethanol production plant. Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), BACT is required for all facilities constructed after January 1, 1980 that have potential VOC emissions of equal to or greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8. Based on the calculations (see Appendix A) and the analysis of applicable state regulations (see State Rule Applicability section of TSD), the following facilities are subject to the requirements of 326 IAC 8-1-6:

- Fermentation Process;
- Distillation Process;
- DDGS Dryers (EU039, EU040, EU042, and EU043); and
- Ethanol Loading Rack (EU047).

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft US EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below:

(a) Identify all potentially available control options;
(b) Eliminate technically infeasible control options;
(c) Rank remaining control technologies by control effectiveness;
(d) Evaluate the most effective controls and document the results as necessary; and
(e) Select BACT.

In accordance with EPA guidance, the BACT analysis should take into account the energy, environmental, and economic impacts. Emission reductions may be achieved through the application of available control techniques, changes in process design, and/or operational limitations.

A summary of the BACT review for the fermentation process is provided in Section B.1, the BACT review for the distillation process is provided in Section B.2, the BACT review for the DDGS dryers is provided in Section B.3, and the BACT review for the ethanol loading rack is provided in Section B.4. These BACT determinations are based on the following information:

(a) The EPA RACT/BACT/LAER (RBLC) Clearinghouse; and
(b) State and local air quality permits.

Appendix B.1
Best Available Control Technology (BACT) Determination
For the Fermentation Process

Introduction:

ASA Linden, LLC will use a fermentation process to produce ethanol from grain. The potential VOC emissions from this activity are estimated to be greater than 25 tons per year. Since this facility will be constructed after the January 1, 1980 applicability date and there are no other 326 IAC 8 rules applicable to this process, ASA Linden, LLC is required to control the VOC emissions from the fermentation process with BACT, pursuant to 326 IAC 8-1-6.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the fermentation process at ethanol production plants:

(a) IDEM, OAQ reviewed the following six control technologies:

1. Carbon Adsorption:

Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Organic vapors retained on the adsorbent are thereafter desorbed and both the adsorbate and absorbent are recovered.

Carbon adsorption systems operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOC in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. Regulatory considerations dictate that the adsorbent be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the absorbate (solvent) is recovered for reuse or disposal. Non-regenerative systems require the removal of the adsorbent and replacement with fresh or previously regenerated carbon.

2. Wet Scrubbers:

A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent. However, other solvents may be used dependent upon the components of the waste stream.

3. Thermal Oxidation:

An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer.

Of all the VOC control technologies evaluated, thermal oxidization is the one whose VOC reduction efficiency is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated

or chlorinated solvents) and concentrations, and therefore meet all regulatory standards. In addition to the energy penalty associated with thermal oxidization, NOx emissions will be generated from the combustion of natural gas used to fuel the oxidizer. A thermal oxidizer normally provides a VOC destruction efficiency of at least 98%.

4. Catalytic Oxidation:

In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of the VOC without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 98%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

5. Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream application. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). A flare normally provides a VOC destruction efficiency greater than 98%.

6. Refrigeration Condenser:

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. A refrigeration condenser normally provides a VOC control efficiency greater than 90%.

(b) The search for the fermentation process in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 6.0 lbs/hr.	Under Construction
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Fermentation	Wet scrubber with a control efficiency of 97%. VOC emissions < 2.44 lbs/hr.	Under Construction.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Fermentation	Wet scrubber (packed tower). VOC Emissions < 7.4 lbs/hr.	Not Available.
Michigan Ethanol	MI-0359	11/04/02 (MI)	Fermentation	BACT determined to be a scrubber with 97% control efficiency and VOC emissions < 6.0 lbs/hr	97.4% (03/19/03)
Grain Processing Corporation	IN-0075	06/10/97 (IN)	Fermentation	Scrubber with 95% control efficiency.	Not Available.
Cargill, Inc.	NE-0016	04/25/96 (NE)	Fermentation	BACT determined to be a wet scrubber with a VOC emission limit of 11.8 lbs/hr.	Not Available.

(c) In addition to the RBLC data, ASA Linden, LLC and IDEM, OAQ collected the following information for the fermentation processes at other ethanol production plants located in other states:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Agri-Energy*, MN	22	Wet scrubber and thermal oxidizer	95% removal or 10 ppm	0.58 lbs/hr (01/30/03)
Al-Corn*, MN	34.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.2%; 6.65 lbs/hr (01/21/03)
Central MN Ethanol*, MN	22	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.0%; 2.04 lbs/hr (11/27/02)
Corn Plus, MN	44	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available.
CVEC, MN	49.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available.
Diversified Energy Co.**, MN	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	2.74 lbs/hr (01/04)
Ethanol 2000**, MN	35	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	98.28%; 5.40 lbs/hr (12/04/02)
Agra Resources Coop. (dba EXOL), MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available.
Pro-Corn, MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	5.11 lbs/hr (04/01/03)
ACE Ethanol*, WI	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	1.07 lbs/hr (11/20/02)
CMEC, MN	22	Wet scrubber	4.3 lbs/hr	98.98%; 2.88 lbs/hr (11/26/02)
MN Energy, MN	19	Wet scrubber	NA	23 lbs/hr (04/07/03)
Gopher State, MN	NA	2 wet scrubbers in series	98% collection efficiency	99.5%; 0.81 lbs/hr (07/09/03)

* lbs/hr as ethanol.
** lbs/hr as carbon multiplied by the Midwest Scaling Factor of 2.0.

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ eliminated carbon adsorption as not technically feasible for this type of operation. The reasons for eliminating carbon adsorption are as follows:

Carbon Adsorption: Carbon adsorption uses intermolecular forces to accumulate organic material at the surface of an adsorbent (typically activated carbon). These intermolecular forces include the small momentary dipoles that result from the movement of electrons within molecular bonds (van der Waals interactions). The incidence of van der Waals interactions increases with larger molecules because there are more bonds within each molecule. For this reason, carbon adsorption is most effective for larger molecules. The VOC compounds emitted from the fermentation system include several small molecules, such as ethanol (MW = 46), acetaldehyde (MW = 44), and formaldehyde (MW = 30). Due to the small size of these molecules, the van der Waals interactions are weak. Since carbon adsorption typically requires a VOC concentration of at least 200 to 1,000 ppmv and average VOC molecular weights of at least 50 to 60 atomic units, this technology is considered infeasible for controlling the VOC emissions from the fermentation system.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Using the control efficiencies reported for similar sources, IDEM, OAQ has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency (%)
Thermal Oxidizer	98%
Catalytic Oxidizer	98%
Flare	98%
Wet Scrubber	98% or 20 ppmv
Refrigeration Condenser	90%

Step 4 – Evaluate the Most Effective Controls and Document Results

Based on control efficiency, the thermal oxidizer, catalytic oxidizer, flare, and wet scrubber are the most effective control technologies.

Step 5 – Select BACT

The Permittee plans to recover and sell the carbon dioxide from the fermentation process, which can only be achieved using the wet scrubber. Both the thermal oxidizer and flare destroy the product rather than recovering it. In addition, both the thermal oxidizer and flare generate their own emissions from the combustion process. Since the use of scrubbers has lower environmental impact, generates economic benefit for the Permittee, and provides the highest ranked control efficiency of 98%, the Permittee proposes using a wet scrubber (identified as CE004) as the BACT for the fermentation process. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the fermentation process at this source:

(a) The VOC emissions from the fermentation process shall be controlled by wet scrubber CE004.

(b) The overall VOC control efficiency for the wet scrubber CE004 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

[Note that when the inlet VOC concentration is low, the scrubber will not be able to achieve a control efficiency of 98%. However, the scrubber manufacturer guarantees that the VOC outlet concentration will be less than 20 ppmv or VOC emissions will be reduced by 98%. Therefore, the Permittee shall either comply with the VOC control efficiency requirement or comply with the VOC outlet concentration limits, depending on the inlet VOC concentrations. Compliance with these limits will be demonstrated by stack testing.]

(c) The VOC emissions from wet scrubber CE004 shall not exceed 10.2 lbs/hr. This VOC emission limit was proposed by the Permittee and is based on stack test results from similar sources.

Appendix B.2
Best Available Control Technology (BACT) Determination
For Distillation Process

Introduction:

ASA Linden, LLC will use distillation to concentrate the ethanol produced in the fermentation process. The potential VOC emissions from the distillation process are estimated to be greater than 25 tons per year. Since this facility will be constructed after the January 1, 1980 applicability date and there are no other rules in 326 IAC 8 applicable to this process, ASA Linden, LLC is required to implement BACT to comply with 326 IAC 8-1-6.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the distillation process at ethanol production plants:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detail description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers (packed tower);
3. Thermal Oxidation;
4. Catalytic Oxidation;
5. Flare; and
6. Refrigeration Condenser.

(b) The search for the distillation process in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Fermentation/ Distillation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 6.0 lbs/hr.	Under Construction
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 lbs/hr.	Under Construction.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available.
Michigan Ethanol	MI-0359	11/04/02 (MI)	Distillation	Wet scrubber with a control efficiency of 98%. VOC emissions < 0.46 lbs/hr	94.0% (03/19/03)
Grain Processing Corp.	IN-0075	06/10/97 (IN)	Distillation	Wet scrubber with a control efficiency of 95%.	Not Available.
Cargill, Inc.	NE-0016	04/25/96 (NE)	Distillation	Wet scrubber and a VOC emission limit of 2.22 lbs/hr.	Not Available.

(c) In addition to the RBLC data, ASA Linden, LLC submitted the following information collected from other ethanol production plants for the distillation process:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Agri-Energy*, MN	22	Wet scrubber and thermal oxidizer	95% removal or 10 ppm	0.58 lbs/hr (01/30/03)
Al-Corn*, MN	34.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.2%; 6.65 lbs/hr (01/03)
Central MN Ethanol*, MN	22	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.0%; 2.04 lbs/hr (11/27/02)
Corn Plus, MN	44	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available.
CVEC, MN	49.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available.
Diversified Energy Co.**, MN	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	2.74 lbs/hr (01/04)
Ethanol 2000**, MN	35	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	5.40 lbs/hr (12/05/02)
Agra Resources Coop. (dba EXOL), MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available.
Pro-Corn, MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available.
ACE Ethanol*, WI	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	1.07 lbs/hr (11/20/02)

* lbs/hr as ethanol.
** lbs/hr as carbon multiplied by the Midwest Scaling Factor of 2.0.

Step 2 – Eliminate Technically Infeasible Control Options

IDEM, OAQ believes that carbon adsorption is not technically feasible for the control of VOC emissions from the distillation process. The primary VOC constituents emitted from this process are ethanol and acetaldehyde. Carbon adsorption is only technically feasible for VOC concentrations of 200 to 1,000 ppmv and an average VOC molecular weight of 50 to 60 atomic units.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Using the control efficiencies reported for similar sources, IDEM, OAQ has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency (%)
Thermal Oxidizer	98%
Catalytic Oxidizer	98%
Flare	98%
Wet Scrubber	98% or 20 ppmv
Refrigeration Condenser	90%

Step 4 – Evaluate the Most Effective Controls and Document Results

Based on control efficiency, the thermal oxidizer, catalytic oxidizer, flare, and wet scrubber are the most effective control technologies.

Step 5 – Select BACT

Both thermal oxidizer and flare generate their own emissions from the combustion process. ASA Linden, LLC proposes to use thermal oxidizer with heat recovery steam generator (TO/HRSG) systems (CE003 and CE006) as the BACT for the distillation process. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the distillation and dehydration process:

(a) The VOC emissions from the distillation process shall be controlled by the TO/HRSG system CE003 or CE006.

(b) The overall VOC control efficiency for each of the TO/HRSG systems CE003 and CE006 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the stack EP003 for the TO/HRSG systems (CE003 and CE006) shall not exceed 8.5 lbs/hr. This VOC emission limit was proposed by the Permittee and is based on stack test results from similar sources. The Permittee is required to perform stack testing to demonstrate compliance with this limit.

Appendix B.3
Best Available Control Technology (BACT) Determination
For the DDGS Dryers (EU039, EU040, EU042, and EU043)

Introduction:

VOC will be emitted from the DDGS drying and cooling process as trace quantities of alcohol from the fermentation process are evaporated. Other sources of VOC emissions result from the combustion of fuel in the dryers and the partial oxidation of organic material during the drying process. The potential VOC emissions from each of the DDGS dryers (EU039, EU040, EU042, and EU043) are greater than 25 tons per year and there are no other rules in 326 IAC 8 applicable to DDGS dryers; therefore, the Permittee is required to control the VOC emissions from the DDGS dryers with BACT. The potential VOC emissions from the DDGS cooling drum are less than 25 tons/yr. Therefore, the requirements of 326 IAC 8-1-6 (BACT) are not applicable to the DDGS cooling drum (EU046).

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the dryers at ethanol production plants:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detail description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers;
3. Thermal Oxidation;
4. Catalytic Oxidation;
5. Flare; and
6. Refrigeration Condenser.

(b) The search for DDGS dryers in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Dryers	RTO with a control efficiency of 98%. VOC emissions < 6.0 lbs/hr.	Under Construction
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 lbs/hr.	Under Construction.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available.
Michigan Ethanol	MI-0359	11/04/02 (MI)	Dryer	RTO with a control efficiency of 95%	99.6% (03/19/03)
Archer Daniels Midland Co.	IL-0087	12/27/02 (IL)	Feed Dryer	RTO with a control efficiency of 95% and VOC < 10 ppm.	Not Available.
New Energy Corp.	T141-6956-00033	Draft (IN)	DDGS Dryers	RTO with a control efficiency of 95%	98.8% (RTO1) 99.2% (RTO2) (06/30/04)

(c) In addition to the RBLC data, ASA Linden, LLC and IDEM, OAQ collected the following information for DDGS dryers at other ethanol production plants located at other states:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Ace Ethanol, WI	NA	RTO	96% reduction	NA
Agri-Energy, MN	22	RTO	95% destruction or 10 ppm	99.59% (01/28/03)
Al-Corn, MN	30	TO	95% destruction or 10 ppm	0.11 lbs/hr (08/03/04)
Central MN Ethanol, MN	22	Wet scrubber	95% destruction or 10 ppm	NA
Corn Plus, MN	44	TO or Boiler	95% destruction or 10 ppm	NA
CVEC, MN	49.5	RTO	95% destruction or 10 ppm	NA
Diversified Energy Co., MN	20	RTO	95% destruction or 10 ppm	NA
Ethanol 2000, MN	35	RTO	95% destruction or 10 ppm	97.74 %; 5.94 lbs/hr (10/31/02)
Agra Resources Coop. (dba EXOL), MN	50	RTO	95% destruction or 10 ppm	NA
Pro-Corn, MN	50	RTO	95% destruction or 10 ppm	97.7%; 3.54 lbs/hr (04/01/03)
Gopher State, MN	NA	RTO	95% destruction and 7.7 lbs/hr	1.225 lbs/hr (09/21/01)
EXOL, MN	NA	RTO	NA	0.42 lbs/hr (08/26/03)
DENCO, MN	30	RTO	6.0 lbs/hr	97.3%; 1.93 lbs/hr (01/20/04)

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ eliminated carbon adsorption, catalytic oxidation, flares, and refrigeration condensers as not technically feasible for this type of operation. The reasons for eliminating these control technologies are as follows:

Carbon Adsorption: Carbon adsorption typically requires a VOC concentration of at least 200 to 1,000 ppm and an average VOC molecular weight of at least 50 to 60 atomic units. Therefore, IDEM, OAQ concludes that carbon adsorption is not an effective control for the dryers due to the characteristics of the dryer exhaust gasses.

Catalytic Oxidizer: Catalytic oxidizers use a catalyst to lower the operating temperature of the oxidation unit. The catalyst must remain effective during operation in order for the control efficiency of the device be maintained. Fouling of the catalyst will rapidly decrease the control efficiency. The catalyst material used for catalytic oxidation has small channels for the waste gas stream to flow. As a result, particulate matter in the dryer exhaust streams is likely to accumulate in the catalyst material, thereby fouling the catalyst and reducing the control efficiency. For this reason, OAQ has concluded that catalytic oxidation is an unreliable control technology for the dryers because of the presence of particulates in the exhaust gasses.

Flares: Since flares do not maintain a constant combustion zone temperature, they require supplemental natural gas to enrich the waste gas stream if the VOC concentration is low. In order to increase the heat value of the dryers, natural gas must be added to the exhaust gasses prior to the flare.

Refrigeration Condensers: OAQ believes that condensers would be technically infeasible because the dryer exhaust characteristics of low VOC concentration and high volumetric flow rate would make condensers ineffective.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

IDEM, OAQ has ranked the remaining control technologies by control efficiency as follows:

Control Technology	Control Efficiency (%)
Thermal Oxidation	98% or 10 ppmv
Wet Scrubber	Less than 96%*

* A wet scrubber applied to this type of operation will not achieve the level of control that a thermal oxidizer will because of the large flow rate and dilute VOC concentration. Mass transfer in a contact scrubber is driven by concentration. Elevated temperature and particulate matter are also negative properties of this gas stream that make wet scrubbing a less appropriate control technology than the alternatives. The control efficiency is based on a wet scrubber that was applied to a spent grain dryer at an ethanol plant in Luverne, MN.

Step 4 – Evaluate the Most Effective Controls and Document Results

According to the analysis above, the most effective control is a thermal oxidizer with a control efficiency of 98%.

Step 5 – Select BACT

ASA Linden, LLC proposed to use TO/HRSG systems CE003 and CE006 with a control efficiency of 98% to control the VOC emissions from the DDGS dryers (EU039, EU040, EU042, and EU043). The TO/HRSG systems CE003 and CE006 are also used to control the VOC emissions from the distillation process. Both the TO/HRSG systems vent through the same stack EP003. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the DDGS dryers (EU039, EU040, EU042, and EU043) at this source:

(a) The VOC emissions from the DDGS dryers (EU039, EU040) shall be controlled by the TO/HRSG system CE003.

(b) The VOC emissions from the DDGS dryers (EU042, EU043) shall be controlled by the TO/HRSG system CE006.

(c) The overall efficiency for each of the TO/HRSG systems CE003 and CE006 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10ppmv. The Permittee is required to perform stack testing to demonstrate compliance with this limit.

(d) The VOC emissions from stack EP003 for the TO/HRSG systems (CE003 and CE006) shall not exceed 8.5 lbs/hr. This VOC emission limit was proposed by the Permittee and was calculated based on stack test results from similar sources and scaled up using the plant capacities. The Permittee is required to perform stack testing to demonstrate compliance with this limit.

Appendix B.4
Best Available Control Technology (BACT) Determination
For the Ethanol Loading Rack (EU047)

Introduction:

ASA Linden, LLC will ship denatured ethanol using either tank trucks or railcars. During the loading of the truck and rail tanks, VOC will be emitted as ethanol vapors and gases present in the tanks from previous cargos are displaced by liquid ethanol. The railcars are dedicated tanks but the trucks may carry gasoline before filling with ethanol. The potential VOC emissions from this activity were calculated using the methodology in AP-42, Section 5.2, Transportation and Loading of Petroleum Liquids (1/95) and are estimated to be greater than 25 tons per year from the denatured ethanol loading operations (see the calculations in Appendix A). Since the ethanol loading rack (EU047) will be constructed after the January 1, 1980 applicability date and there are no other rules in 326 IAC 8 applicable to this unit, the Permittee is required to control the VOC emissions from the ethanol loading rack (EU047) with BACT.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the ethanol loading racks:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detail description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers;
3. Thermal Oxidation;
4. Flare; and
5. Refrigeration Condenser.

(b) The search for ethanol loading process in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%	Under Construction.
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%	Under Construction.
Motiva Enterprises, L.L.C.	CT-0149	10/22/03 (CT)	Fuel Loading Rack	Vapor recovery unit with carbon absorption unit	Not Available.
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Ethanol Loading Rack	Flare with a control efficiency of 94%.	Not Available.
Archer Daniels Midland Co.	IL-0090	03/28/03 (IL)	Ethanol Loading Rack	Flare with a control efficiency of 95%.	Not Available.
Van Waters & Rogers	CA-0894	09/01/99 (CA)	Truck Loading Stations	Thermal oxidizer with a control efficiency of 95%.	Not Available.

(c) In addition to the RBLC data, ASA Linden, LLC submitted the following information collected from other ethanol production plants for the ethanol loadout process:

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits
Agri-Energy, MN	22	DDGS Dryer/TO	Truck: 95% Destruction or 10ppm of VOC emissions from the thermal oxidizer. Railcar: dedicated ethanol vessels only
Al-Corn, MN	30	DDGS Dryer/TO	Truck: 95% Destruction or 10ppm of VOC emissions from the thermal oxidizer. Railcar: dedicated ethanol vessels only
Central MN Ethanol, MN	22	DDGS Dryer	Truck: Route to dryer control equipment Railcar: dedicated ethanol vessels only
Corn Plus, MN	44	Boiler/TO	95% destruction or 10 ppm limit for boiler
CVEC, MN	49.5	DDGS Dryer/TO	Truck: Route to dryer control equipment (95% reduction or 10 ppm) Railcar: Dedicated ethanol vessels only
Diversified Energy Co., MN	20	Flare	95% destruction
Ethanol 2000, MN	35	Flare	95% destruction
Agra Resources Coop. (dba EXOL), MN	50	DDGS Dryer/TO	Truck: 95% destruction or 10 ppm limit for VOC emissions from the thermal oxidizer.
Pro-Corn, MN	50	Flare	95% destruction

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ eliminated carbon adsorption and wet scrubbers as technically infeasible for this type of operation. The reasons for eliminating these technologies are as follows:

Carbon Adsorption: Carbon adsorption is effective when there is sufficient VOC concentration and adequate van der Waals interactions. Because the primary VOC being emitted is ethanol, the van der Waals interactions would be minimal. Therefore, carbon adsorption is not typically used in this type of application. According to Calgon Carbon Industries, carbon adsorption is actually used in some applications to purify ethanol. This means that carbon adsorption is so ineffective at capturing ethanol that it is used to remove contaminants from ethanol. Therefore, carbon adsorption is considered technologically infeasible for controlling the VOC emissions from the ethanol loading facility.

Wet Scrubbers: Wet scrubbers are reasonably effective for controlling VOC emissions when the VOCs are easily absorbed in water. Several characteristics control the effectiveness of wet scrubbers for VOC removal. The one parameter that can be easily analyzed to determine if wet scrubbing is effective is the solubility of the pollutants in the absorbent (water). The constituents in gasoline include many different organic compounds. Some of these compounds have limited solubility in water; therefore, potentially affect the control efficiency of the scrubber. A significant amount of VOC emissions emitted during the loading of tank trucks arises from the displacement of petroleum or gasoline vapors present in the tank from the previous cargo. While the emissions from the ethanol would be effectively controlled by a wet scrubber, the VOC emissions resulting from the displacement of gasoline or petroleum vapors would not be effectively controlled by a wet scrubber.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

A condenser, thermal oxidizer, and flare are the only technically feasible control options for the ethanol loading facility. IDEM, OAQ reviewed industry data to determine the VOC control efficiency of each of these remaining control technologies. The results of this review are summarized in the following table.

Control Technology	VOC Control Efficiency (%)
Flare	98%
Thermal Oxidizer	98%
Refrigeration Condenser	Greater than 90%

Step 4 – Evaluate the Most Effective Controls and Document Results

The two most effective control technologies are thermal oxidizers and flares.

Step 5 – Select BACT

Since flares achieve the highest control efficiency and have been used to control VOC emissions from other ethanol loading racks, ASA Linden, LLC proposed to use an enclosed flare CE009 with a control efficiency of 98% to control the VOC emissions from the ethanol loading rack (EU047) when loading to the trucks or railcars. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the ethanol loading rack (EU047) at this source:

(a) The VOC emissions from the ethanol loading rack (EU047) shall be collected and controlled by enclosed flare CE009 when this unit is in operation.

(b) The overall efficiency for the enclosed flare CE009 (including the capture efficiency and destruction efficiency) shall be at least 98%.

(c) The VOC emissions from the flare CE009 shall not exceed 1.25 lbs/hr. This limit was calculated based on the VOC emission factor of 1.30 lbs/kgal, the maximum truck loadout rate of 48 kgal/hr, and the flare control efficiency of 98% (1.30 lbs/kgal x 48 kgal/hr x (1-98%) = 1.25 lbs/hr). The VOC emission factor of 1.30 lbs/kgal was calculated using the equation in AP-42, Chapter 5.2 (see the emission calculations in Appendix A).