



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: October 28, 2008

RE: Solae, Inc. / 073-23512-00011

FROM: Matthew Stuckey, Branch 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, Suite N 501E, 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.dot12/03/07



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Minor Source Operating Permit OFFICE OF AIR QUALITY

Solae, LLC
413 Cressy Avenue
Remington, Indiana 47977

(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.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

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 MSOP under 326 IAC 2-6.1.

| | |
|-------------------------------------------------------------------------------------|-----------------------------------|
| Operation Permit No.: M073-23512-00011 | |
| Issued by/Original Signed By: | Issuance Date: October 28, 2008 |
| | Expiration Date: October 28, 2013 |
| Alfred C. Dumauual, Ph.D., Section Chief Permits Branch Office of Air Quality | |

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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 and A.2 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 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary stationary soy flour and soy protein concentrate processing plant.

| | |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source Address: | 413 Cressy Avenue, Remington, Indiana 47977 |
| Mailing Address: | 413 Cressy Avenue, Remington, Indiana 47977 |
| General Source Phone Number: | (219) 261-2390 |
| SIC Code: | 2099 |
| County Location: | Jasper |
| Source Location Status: | Attainment for all criteria pollutants |
| Source Status: | Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories |

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) soybean lecithin process (ethanol extraction), identified as EU01, consisting of the following equipment, constructed in November 1999 except where otherwise noted below, and all exhausting at stack L-04:
- (1) One (1) primary evaporator (identified as #99-2268), with volatile organic compounds reclaimed by a condenser, identified as SC_{ER};
 - (2) One (1) extractor;
 - (3) One (1) finishing evaporator (identified as Nat. Bd. #BD252), with volatile organic compounds reclaimed by a condenser, identified as SC_{PF};
 - (4) One (1) residue evaporator (identified as Nat. Bd. #BD264), with volatile organic compounds reclaimed by a condenser, identified as SC_R;
 - (5) One (1) miscella tank (identified as #2), constructed in 1998, with a maximum capacity of 1,470 gallons;
 - (6) One (1) ethanol work tank (identified as #1), constructed in 1998, with a maximum capacity of 2880 gallons;
 - (7) One (1) fixed roof dome wet storage tank (identified as #3), constructed in 1998, storing alcohol, with volatile organic compounds controlled by a refrigerated vent condenser (identified as RVC), with a maximum capacity of 1175 gallons;
 - (8) One (1) fixed roof dome storage tank for storing lecithin (identified as #4), with a maximum capacity of 1470 gallons;
 - (9) One (1) bulk container storing denatured alcohol;
 - (10) One (1) 10,000 gallon acetone storage tank;

- (11) Three (3) 8,000 gallon storage tanks, one (1) storing water and acetone (wet acetone), one (1) storing distilled acetone (dry acetone), and one (1) storing acetone/soybean oil (miscella);
 - (12) Five (5) 10,000 gallon storage tanks, constructed in 1992, and each storing crude soybean lecithin; and
 - (13) One (1) 10,000 gallon soybean oil storage tank, constructed in 1992.
- (b) One (1) 24 MMBtu per hour spray dryer, equipped with low NOx burner, burning natural gas (identified as #1 SD), constructed in 1978, with particulate emissions controlled by a baghouse and exhausting at stack P-8. [326 IAC 6-3-2]
 - (c) One (1) 24 MMBtu per hour spray dryer, equipped with low NOx burner, burning natural gas (identified as #4 SD), constructed in 1991, with particulate emissions controlled by a baghouse and exhausting at stack P-14. [326 IAC 6-3-2]
 - (d) One (1) 35.4 MMBtu per hour spray, equipped with low NOx burner, dryer burning natural gas (identified as #5 SD), constructed in 2000, with particulate emissions controlled by two (2) cyclones and one (1) baghouse, and exhausting at stack P-20. A heat recovery unit is used in conjunction with the spray dryer baghouse. [326 IAC 6-3-2]
 - (e) One (1) 29.4 MMBtu per hour North American boiler, burning natural gas, constructed in 1978, and exhausting at stack P-12. [326 IAC 6-2-3]
 - (f) One (1) 25 MMBtu per hour Centrolex boiler, burning natural gas, constructed in 1994, and exhausting at stack L-01. Under 40 CFR 60, Subpart Dc, this unit is considered to be Small Industrial-Commercial-Institutional Steam Generating Unit. [326 IAC 6-2-4]
 - (g) Product handling emission units consisting of the following:
 - (1) One (1) grinding and packaging system, constructed in 1993, with emissions controlled by a baghouse considered integral to the process and exhausting at stack L-02. [326 IAC 6-3-2]
 - (2) One (1) central vacuum system, constructed in 1997, with emissions controlled by a baghouse considered integral to the process and exhausting at stack P-4. [326 IAC 6-3-2]
 - (3) Three (3) product storage bins, each constructed in 1999, with emissions controlled by three aspiration baghouses considered integral to the process and exhausting at stack P-5. [326 IAC 6-3-2]
 - (4) Two (2) ingredient silos, each constructed in 1973 and controlled by a baghouse considered integral to the process and exhausting at stacks P-9 and P-10, respectively. [326 IAC 6-3-2]
 - (5) One (1) grinding raw material receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-15. [326 IAC 6-3-2]
 - (6) One (1) ground product receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-16. [326 IAC 6-3-2]
 - (7) One (1) receiver from #4 spray drier, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-17. [326 IAC 6-3-2]

- (8) One (1) raw material conveying receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-18. [326 IAC 6-3-2]
- (9) Two (2) ingredient receiving storage tanks, constructed in 1999 and 2000, each controlled by a baghouse considered integral to the process and exhausting at stacks P-19 and P-29, respectively. [326 IAC 6-3-2]
- (10) One (1) soy protein product receiver, constructed in 2000, controlled by a product baghouse considered integral to the process and exhausting at stack P-21. [326 IAC 6-3-2]
- (11) One (1) totally enclosed soy protein grinder discharging to a ground product receiver considered integral to the process. [326 IAC 6-3-2]
- (12) One (1) integral soy protein ground product receiver, constructed in 2000, controlled by a remote baghouse and exhausting at stack P-22. [326 IAC 6-3-2]
- (13) One (1) soy protein remote receiver, constructed in 2000, controlled by a remote baghouse considered integral to the process and exhausting at stack P-23. [326 IAC 6-3-2]
- (14) One (1) soy protein reject bin, constructed in 2000, controlled by a reject bin baghouse considered integral to the process and exhausting at stack P-24. [326 IAC 6-3-2]
- (15) Two (2) soy protein mixers, each constructed in 2000, controlled by two mixer baghouses considered integral to the process and exhausting at stacks P-25 and P-30, respectively. [326 IAC 6-3-2]
- (16) One (1) soy protein packing surge receiver, constructed in 2000, controlled by a packaging surge receiver baghouse, considered integral to the process and exhausting at stack P-26. [326 IAC 6-3-2]
- (17) One (1) tote fill receiver, constructed in 1999, controlled by a tote fill baghouse considered integral to the process, and exhausting at stack P-27. [326 IAC 6-3-2]
- (18) One (1) packaging aspiration receiver, constructed in 1994, controlled by a packaging aspiration receiver baghouse considered integral to the process, and exhausting at stack P-28. [326 IAC 6-3-2]
- (19) One (1) product storage bin, constructed in 2000, controlled by a baghouse considered integral to the process and exhausting at stack P-31. [326 IAC 6-3-2]
- (20) Two (2) product receivers, constructed in 2000, controlled by two baghouses considered integral to the process and exhausting at stacks P-32 and P-33. [326 IAC 6-3-2]
- (21) Two (2) ingredient receiving storage tanks, constructed in 2002, controlled by two baghouses considered integral to the process and exhausting at stack P-34. [326 IAC 6-3-2]
- (22) One (1) packaging surge receiver, constructed in 2006, controlled by a baghouse considered integral to the process and exhausting at stack P-35. [326 IAC 6-3-2]
- (23) One (1) product conveyor, constructed in 2006, used to pneumatically convey soy protein to one (1) receiver, equipped with fabric filters considered integral to the process, and exhausting at stack P-36. [326 IAC 6-3-2]

- (24) One (1) grinder. [326 IAC 6-3-2]
- (25) One (1) classifier. [326 IAC 6-3-2]
- (h) Degreasing operations that do not exceed 145 gallons per 12 months, and are not subject to 326 IAC 20-6. [326 IAC 8-3-2]
- (i) Paved roads and parking lots with public access. [326 IAC 6-4]

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

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 2-1.1-1) shall prevail.

B.2 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

- (a) This permit, M073-23512-00011, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

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

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

B.4 Enforceability

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 Severability

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.6 Property Rights or Exclusive Privilege

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

B.7 Duty to Provide Information

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

B.8 Certification

- (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.9 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251
- (c) The notification 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.

B.10 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

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

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or

potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.11 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to M073-23512-00011 and issued pursuant to permitting programs approved into the state implementation plan have been either:

- (1) incorporated as originally stated,
- (2) revised, or
- (3) deleted.

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

B.12 Termination of Right to Operate [326 IAC 2-6.1-7(a)]

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 ninety (90) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

B.13 Permit Renewal [326 IAC 2-6.1-7]

- (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 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

- (b) A timely renewal application is one that is:
- (1) Submitted at least ninety (90) days prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-6.1 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.14 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.

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

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

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

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.15 Source Modification Requirement

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

B.16 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

(a) Enter upon the Permittee's premises where a permitted 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.17 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit

responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

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

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

- (c) The Permittee may implement notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

B.18 Annual Fee Payment [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.
- (b) 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.19 Credible Evidence [326 IAC 1-1-6]

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

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(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 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

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

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

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

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

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

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

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

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

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

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

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

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

All required notifications shall be submitted to:

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

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

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

- (f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) Indiana Licensed 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 Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-6.1-5(a)(2)]

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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.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 2-6.1-5(a)(2)]

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

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

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

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

C.13 Instrument Specifications [326 IAC 2-1.1-11]

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

Corrective Actions and Response Steps

C.14 Response to Excursions or Exceedances

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

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test

- (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 twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

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

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

C.16 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.17 General Record Keeping Requirements [326 IAC 2-6.1-5]

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

C.18 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) Reports required by conditions in Section D of this permit shall be submitted to:
- Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (b) 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.
- (c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1 FACILITY OPERATION CONDITIONS – Soybean Lecithin Process

Facility Description

- (a) One (1) soybean lecithin process (ethanol extraction), identified as EU01, consisting of the following equipment, constructed in November 1999 except where otherwise noted below, and all exhausting at stack L-04:
- (1) One (1) primary evaporator (identified as #99-2268), with volatile organic compounds reclaimed by a condenser, identified as SC_{ER};
 - (2) One (1) extractor;
 - (3) One (1) finishing evaporator (identified as Nat. Bd. #BD252), with volatile organic compounds reclaimed by a condenser, identified as SC_{PF};
 - (4) One (1) residue evaporator (identified as Nat. Bd. #BD264), with volatile organic compounds reclaimed by a condenser, identified as SC_R;
 - (5) One (1) miscella tank (identified as #2), constructed in 1998, with a maximum capacity of 1,470 gallons;
 - (6) One (1) ethanol work tank (identified as #1), constructed in 1998, with a maximum capacity of 2880 gallons;
 - (7) One (1) fixed roof dome wet storage tank (identified as #3), constructed in 1998, storing alcohol, with volatile organic compounds controlled by a refrigerated vent condenser (identified as RVC), with a maximum capacity of 1175 gallons;
 - (8) One (1) fixed roof dome storage tank for storing lecithin (identified as #4), with a maximum capacity of 1470 gallons;
 - (9) One (1) bulk container storing denatured alcohol;
 - (10) One (1) 10,000 gallon acetone storage tank;
 - (11) Three (3) 8,000 gallon storage tanks, one (1) storing water and acetone (wet acetone), one (1) storing distilled acetone (dry acetone), and one (1) storing acetone/soybean oil (miscella);
 - (12) Five (5) 10,000 gallon storage tanks, constructed in 1992, and each storing crude soybean lecithin; and
 - (13) One (1) 10,000 gallon soybean oil storage tank, constructed in 1992.

(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 2-6.1-5(a)(1)]

D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

Pursuant to CP073-9923-00011, issued on January 14, 1999, T073-12879-00011, issued May 14, 2002, and 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the following limitations apply to the soybean lecithin process (ethanol extraction):

- (a) The BACT for the lecithin vent gas and overall solvent losses shall be as follows:

| Facility/Process | Control Description | VOC Emission Limit* |
|--------------------------------|-----------------------------|------------------------------|
| Vent gas from Lecithin Process | Refrigerated Vent Condenser | 2.60 lb VOC/ ton of lecithin |
| Overall Solvent Losses | None | 20.0 lb VOC/ton of lecithin |

* The VOC emission limit of 20.0 lb VOC/ton of lecithin includes the point source emission limit of 2.60 lbs VOC/ton of lecithin.

(b) BACT for the fugitive volatile organic compounds loss shall include the following enhanced inspection, maintenance, and repair program for the solvent extraction portion:

(1) The Permittee shall determine compliance with the standards in the table below by using the procedures of 40 CFR Part 60, Appendix A, Method 21. The instrument shall be calibrated before each day of its use by the procedures as specified in Method 21. A leak is defined as an instrument reading of 500 ppm above background or greater, except for flanges, and connectors where a leak is defined as 10,000 ppm above background.

| Equipment | Leak Standard (ppm) |
|--------------------------------|---------------------|
| Pumps | 500 |
| Valves | 500 |
| Pressure Relief Devices | 500 |
| Flanges, Connectors, and Seals | 10,000 |

(2) The Permittee shall tag all detected leaks with a weatherproof and readily visible identification tag with a distinct number. Once a leaking component is detected, first-attempt repairs must be done within five days and be completed within 15 days of detecting the leaking components. If the repair cannot be accomplished within 15 days, then the Permittee shall send a notice of inability to repair to the OAQ within 20 days of detecting the leak. The notice must be received by the Technical Support and Modeling and Compliance Branch, Office of Air Quality within 20 days after the leak was detected. At a minimum, the notice shall include the following:

- (A) Equipment, operator, and instrument identification number;
- (B) Date of leak detection;
- (C) Measured concentration (ppm) and background (ppm);
- (D) Leak identification number associated with the corresponding tag; and
- (E) Reason of inability to repair within 5 to 15 days of detection.

D.1.2 Preventive Maintenance Plan [326 IAC 1-6-3]

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

Compliance Determination Requirements

D.1.3 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

In order to comply with Condition D.1.1, the refrigerated vent condenser (identified as RVC) shall operate at all times that the soybean lecithin process (ethanol extraction) is in operation.

D.1.4 Testing Requirements [326 IAC 2-1.1-11]

Within five (5) years of the latest compliant stack test, in order to demonstrate compliance Condition D.1.1, the Permittee shall perform VOC testing for the soybean lecithin process

(ethanol extraction), identified as EU01, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

D.1.5 Parametric Monitoring

In order to document compliance with Condition D.1.1, the Permittee shall comply with the following requirements for the refrigerated vent condenser (identified as RVC) of the soybean lecithin process (ethanol extraction):

- (a) The Permittee shall monitor and record the refrigerant flow rate and temperature of the refrigerated vent condenser (identified as RVC) as an hourly average when the ethanol extraction process is in operation. Unless operated under conditions, for which the Section C - Response to Excursions or Exceedances specifies otherwise, the temperature shall be maintained at less than ten (10) degrees Fahrenheit or the range established during the latest stack test. The refrigerant flow rate shall be maintained within the range established during the latest stack test. This may be accomplished by using an electronic data management system (EDMS) or by taking manual readings.
- (b) In the event that a refrigerated condenser's failure has been observed, an inspection shall be conducted. Based on the findings of the inspection, any corrective actions shall be devised within eight (8) hours of discovery and shall include a timetable for completion.

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

D.1.6 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1(a), the Permittee shall maintain records of the total volatile organic compounds (VOC) emissions calculated monthly from solvent loss, lecithin processed, and their ratio (in pounds of VOC per ton of lecithin processed).
- (b) To document compliance with Condition D.1.1(b), the Permittee shall maintain records of the following to verify compliance with the enhanced inspection, maintenance, and repair program:
 - (1) Equipment inspected;
 - (2) Date of inspection; and
 - (3) Determination of whether a leak was detected.

If a leak is detected, the Permittee shall record the following information to verify compliance with the enhanced inspection, maintenance, and repair program:

- (1) The equipment, operator, and instrument identification number;
- (2) Measured concentration;
- (3) Leak identification number associated with the corresponding tag;
- (4) Date of repair;
- (5) Reason for non-repair if unable to repair within 5 to 15 days of detection;
- (6) Maintenance recheck if repaired - date, concentration, background; and
- (7) Any appropriate comments.

- (c) To document compliance with Condition D.1.5, the Permittee shall maintain the records of the refrigerant flow rate and temperature across the refrigerated vent condenser (identified as RVC).
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.2 FACILITY OPERATION CONDITIONS – Spray Dryers

Facility Description

- (b) One (1) 24 MMBtu per hour spray dryer, equipped with low NOx burner, burning natural gas (identified as #1 SD), constructed in 1978, with particulate emissions controlled by a baghouse and exhausting at stack P-8. [326 IAC 6-3-2]
- (c) One (1) 24 MMBtu per hour spray dryer, equipped with low NOx burner, burning natural gas (identified as #4 SD), constructed in 1991, with particulate emissions controlled by a baghouse and exhausting at stack P-14. [326 IAC 6-3-2]
- (d) One (1) 35.4 MMBtu per hour spray, equipped with low NOx burner, dryer burning natural gas (identified as #5 SD), constructed in 2000, with particulate emissions controlled by two (2) cyclones and one (1) baghouse, and exhausting at stack P-20. A heat recovery unit is used in conjunction with the spray dryer baghouse. [326 IAC 6-3-2]

(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 2-6.1-5(a)(1)]

D.2.1 Particulate Matter (PM) [326 IAC 6-3-2]

The particulate emissions from the three (3) spray dryers shall not exceed 2.91 pounds per hour each. Compliance with this limit satisfies the requirements of 326 IAC 6-3.

D.2.2 Preventive Maintenance Plan [326 IAC 2-6-3]

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

Compliance Determination Requirements

D.2.3 Particulate Matter (PM)

- (a) In order to comply with Condition D.2.1, the baghouses for particulate control shall be in operation and control emissions from the three (3) spray dryers at all times that the three (3) spray dryers are in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]

D.2.4 Visible Emissions Notations

- (a) Daily visible emission notations of the three (3) spray dryers stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.5 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the three (3) spray dryers at least once per day, when the spray dryers are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 0.25 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 and 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 and Exceedances, shall be considered a deviation from this permit.

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

D.2.6 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (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 has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

D.2.7 Broken or Failed Cyclone Detection

In the event that cyclone failure has been observed:

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

Record Keeping and Reporting Requirement [326 IAC 2-6.1-5(a)(2)]

D.2.8 Record Keeping Requirements

- (a) To document compliance with Condition D.2.4, the Permittee shall maintain daily records of visible emission notations of the spray dryers stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

- (b) To document compliance with Condition D.2.5, the Permittee shall maintain a daily record of the pressure drop across the baghouses controlling the three (3) spray dryers. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of pressure drop reading (e.g. the process did not operate that day).
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.3 FACILITY OPERATION CONDITIONS - Boilers

Facility Description

- (e) One (1) 29.4 MMBtu per hour North American boiler, burning natural gas, constructed in 1978, and exhausting at stack P-12. [326 IAC 6-2-3]
- (f) One (1) 25 MMBtu per hour Centrolex boiler, burning natural gas, constructed in 1994, and exhausting at stack L-01. Under 40 CFR 60, Subpart Dc, this unit is considered to be Small Industrial-Commercial-Institutional Steam Generating Unit. [326 IAC 6-2-4]

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.3.1 Particulate Matter Limitation (PM) [326 IAC 6-2-3] [326 IAC 6-2-4]

- (a) Pursuant to the provisions of 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from the one (1) North American boiler rated at 29.4 MMBtu per hour heat input capacity, shall not exceed 0.6 pounds per MMBtu.
- (b) Pursuant to the provisions of 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from the one (1) natural gas-fired Centrolex boiler rated at 25 MMBtu per hour heat input capacity, shall not exceed 0.39 pounds per MMBtu.

D.3.2 Preventive Maintenance Plan [326 IAC 2-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these boilers.

SECTION D.4 FACILITY OPERATION CONDITIONS – Product Handling

Facility Description

- (g) Product handling emission units consisting of the following:
- (1) One (1) grinding and packaging system, constructed in 1993, with emissions controlled by a baghouse considered integral to the process and exhausting at stack L-02. [326 IAC 6-3-2]
 - (2) One (1) central vacuum system, constructed in 1997, with emissions controlled by a baghouse considered integral to the process and exhausting at stack P-4. [326 IAC 6-3-2]
 - (3) Three (3) product storage bins, each constructed in 1999, with emissions controlled by three aspiration baghouses considered integral to the process and exhausting at stack P-5. [326 IAC 6-3-2]
 - (4) Two (2) ingredient silos, each constructed in 1973 and controlled by a baghouse considered integral to the process and exhausting at stacks P-9 and P-10, respectively. [326 IAC 6-3-2]
 - (5) One (1) grinding raw material receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-15. [326 IAC 6-3-2]
 - (6) One (1) ground product receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-16. [326 IAC 6-3-2]
 - (7) One (1) receiver from #4 spray drier, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-17. [326 IAC 6-3-2]
 - (8) One (1) raw material conveying receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-18. [326 IAC 6-3-2]
 - (9) Two (2) ingredient receiving storage tanks, constructed in 1999 and 2000, each controlled by a baghouse considered integral to the process and exhausting at stacks P-19 and P-29, respectively. [326 IAC 6-3-2]
 - (10) One (1) soy protein product receiver, constructed in 2000, controlled by a product baghouse considered integral to the process and exhausting at stack P-21. [326 IAC 6-3-2]
 - (11) One (1) totally enclosed soy protein grinder discharging to a ground product receiver considered integral to the process. [326 IAC 6-3-2]
 - (12) One (1) integral soy protein ground product receiver, constructed in 2000, controlled by a remote baghouse and exhausting at stack P-22. [326 IAC 6-3-2]
 - (13) One (1) soy protein remote receiver, constructed in 2000, controlled by a remote baghouse considered integral to the process and exhausting at stack P-23. [326 IAC 6-3-2]
 - (14) One (1) soy protein reject bin, constructed in 2000, controlled by a reject bin baghouse considered integral to the process and exhausting at stack P-24. [326 IAC 6-3-2]
 - (15) Two (2) soy protein mixers, each constructed in 2000, controlled by two mixer baghouses considered integral to the process and exhausting at stacks P-25 and P-

- 30, respectively. [326 IAC 6-3-2]
- (16) One (1) soy protein packing surge receiver, constructed in 2000, controlled by a packaging surge receiver baghouse, considered integral to the process and exhausting at stack P-26. [326 IAC 6-3-2]
 - (17) One (1) tote fill receiver, constructed in 1999, controlled by a tote fill baghouse considered integral to the process, and exhausting at stack P-27. [326 IAC 6-3-2]
 - (18) One (1) packaging aspiration receiver, constructed in 1994, controlled by a packaging aspiration receiver baghouse considered integral to the process, and exhausting at stack P-28. [326 IAC 6-3-2]
 - (19) One (1) product storage bin, constructed in 2000, controlled by a baghouse considered integral to the process and exhausting at stack P-31. [326 IAC 6-3-2]
 - (20) Two (2) product receivers, constructed in 2000, controlled by two baghouses considered integral to the process and exhausting at stacks P-32 and P-33. [326 IAC 6-3-2]
 - (21) Two (2) ingredient receiving storage tanks, constructed in 2002, controlled by two baghouses considered integral to the process and exhausting at stack P-34. [326 IAC 6-3-2]
 - (22) One (1) packaging surge receiver, constructed in 2006, controlled by a baghouse considered integral to the process and exhausting at stack P-35. [326 IAC 6-3-2]
 - (23) One (1) product conveyor, constructed in 2006, used to pneumatically convey soy protein to one (1) receiver, equipped with fabric filters considered integral to the process, and exhausting at stack P-36. [326 IAC 6-3-2]
 - (24) One (1) grinder. [326 IAC 6-3-2]
 - (25) One (1) classifier. [326 IAC 6-3-2]
- (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 2-6.1-5(a)(1)]

D.4.1 Particulate Matter (PM) [326 IAC 6-3-2]

The particulate emissions from the product handling operations shall not exceed 2.91 pounds per hour each. Compliance with this limit satisfies the requirements of 326 IAC 6-3.

D.4.2 Preventive Maintenance Plan [326 IAC 1-6-3]

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

Compliance Determination Requirements

D.4.3 Particulate Matter (PM)

- (a) In order to comply with Condition D.4.1, the baghouses for particulate control shall be in operation and control emissions from the product handling activities listed in this section at all times that the insignificant activities listed under this section are in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]

D.4.4 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (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 has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

SECTION D.5 FACILITY OPERATION CONDITIONS - Degreasing

Facility Description

- (h) Degreasing operations that do not exceed 145 gallons per 12 months, and are not subject to 326 IAC 20-6. [326 IAC 8-3-2]

(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 2-6.1-5(a)(1)]

D.5.1 Cold Cleaner Operation [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), the owner or operator of facilities constructed after January 1, 1980 shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements; and
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

SECTION E.1 FACILITY OPERATION CONDITIONS

Facility Description

- (f) One (1) 25 MMBtu per hour Centrolex boiler, burning natural gas, constructed in 1994, and exhausting at stack L-01. Under 40 CFR 60, Subpart Dc, this unit is considered to be Small Industrial-Commercial-Institutional Steam Generating Unit. [326 IAC 6-2-4]

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

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

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

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

E.1.2 Standard of Performance for Small Industrial-Commercial-Institutional Steam Generating Units Requirements [40 CFR Part 60, Subpart Dc]

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

Subpart Dc - New Source Performance Standards (NSPS) Requirements for Small Industrial-Commercial-Institutional Steam Generating Units

§ 60.40c Applicability and delegation of authority.

- (a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).
- (b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.
- (c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO₂) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.
- (d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under §60.14.
- (e) Heat recovery steam generators that are associated with combined cycle gas turbines and meet the applicability requirements of subpart GG or KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/hr) heat input of fossil fuel but less than or equal to 29 MW (100

MMBtu/hr) heat input of fossil fuel. If the heat recovery steam generator is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The gas turbine emissions are subject to subpart GG or KKKK, as applicable, of this part).

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

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

§ 60.41c Definitions.

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

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

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

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

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

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

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

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

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

Dry flue gas desulfurization technology means a SO₂ control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

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

Emerging technology means any SO₂ control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under §60.48c(a)(4).

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

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

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

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

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

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

Natural gas means: (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see §60.17).

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

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

Potential sulfur dioxide emission rate means the theoretical SO₂ emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

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

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

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

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

Wet flue gas desulfurization technology means an SO₂ control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases

of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO₂.

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

§ 60.48c Reporting and recordkeeping requirements.

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

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

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

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

(4) Notification if an emerging technology will be used for controlling SO₂ emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in §60.48c(f) to demonstrate compliance with the SO₂ standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

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

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH**

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

| | |
|----------------------|--------------------------|
| Company Name: | Solae, LLC |
| Address: | 413 Cressy Avenue |
| City: | Remington, Indiana 47977 |
| Phone #: | (219) 261-2390 |
| MSOP #: | M073-23512-00011 |

I hereby certify that Solae, LLC is :

still in operation.

I hereby certify that Solae, LLC is :

no longer in operation.

in compliance with the requirements of MSOP M073-23512-00011.

not in compliance with the requirements of MSOP M073-23512-00011.

| |
|---------------------------------------|
| Authorized Individual (typed): |
| Title: |
| Signature: |
| Date: |

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

| |
|-----------------------|
| Noncompliance: |
| |
| |
| |
| |

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY FAX NUMBER - 317 233-6865

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF "MALFUNCTION" AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document For a Minor Source Operating Permit (MSOP)

Source Background and Description

| | |
|----------------------|---------------------------------------------|
| Source Name: | Solae, LLC |
| Source Location: | 413 Cressy Avenue, Remington, Indiana 47977 |
| County: | Jasper |
| SIC Code: | 2099 |
| Operating Permit No: | M073-23512-00011 |
| Permit Reviewer: | ERG/JR |

On September 24, 2008, the Office of Air Quality (OAQ) had a notice published in the *Rennsselaer Republican of Rennsselaer, Indiana* stating that Solae, LLC had applied for a Minor Source Operating Permit (MSOP). The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments on the draft permit were submitted by Solae, LLC. Changes made as a result of this comment is shown throughout this addendum. New language is in **bold** while deleted language is in ~~strikeout~~. The Table of Contents has been updated as necessary.

Comment 1:

Solae requests that Conditions D.2.1 and D.4.1 be clarified to indicate that the allowable particulate matter emission rate from the emission units is 2.91 pounds per hour *each*. As currently worded, the allowable limit could be interpreted as 2.91 pounds per hour for all emission units combined.

Response to Comment 1:

IDEM, OAQ agrees that the 2.91 pounds per hour emission limitation applies individually to each emission unit. The following changes have been made to the permit as a result of this comment:

D.2.1 Particulate Matter (PM) [326 IAC 6-3-2]

The particulate emissions from the three (3) spray dryers shall not exceed 2.91 pounds per hour **each**. Compliance with this limit satisfies the requirements of 326 IAC 6-3.

D.4.1 Particulate Matter (PM) [326 IAC 6-3-2]

The particulate emissions from the product handling operations shall not exceed 2.91 pounds per hour **each**. Compliance with this limit satisfies the requirements of 326 IAC 6-3.

Comment 2:

Solae requests that the references to Spray Dryer #2 and Spray Dryer #3 in the stack summary table of the Technical Support Document be removed because these units have been removed from operation.

Response to Comment 2:

IDEM agrees that the references to Spray Dryer #2 and Spray Dryer #3 do not belong in the Technical Support Document because these units no longer exist. However, no change has been made to the Technical Support Document because IDEM, OAQ prefers that the TSD reflect the permit that was on public notice.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating Permit (MSOP)

Source Description and Location

| | |
|----------------------|---------------------------------------------|
| Source Name: | Solae, LLC |
| Source Location: | 413 Cressy Avenue, Remington, Indiana 47977 |
| County: | Jasper |
| SIC Code: | 2099 |
| Operating Permit No: | M073-23512-00011 |
| Permit Reviewer: | ERG/JR |

The Office of Air Quality (OAQ) has received an application from Solae, LLC requesting an initial MSOP for the operation of a stationary soy flour and soy protein concentrate processing plant.

History

Solae, LLC was issued a Part 70 Operating Permit No. T073-12879-00011 on May 14, 2002 because it was determined that single HAP emissions from this source were greater than 10 tons per year. On August 14, 2006, Solae, LLC submitted an application to the OAQ requesting to renew its operating permit. However, at the time of renewal, Solae, LLC submitted several integral justifications (including one for their condenser system associated with the soybean Lecithin process and several for the baghouse operations). A discussion of these integral justifications can be found later in this TSD. Based on IDEM's evaluation of these justifications as well as the information presented later in this section, OAQ determined that this source qualifies as a MSOP.

Solae's Lecithin process was originally permitted with the thought that the ethanol used in the process might be denatured with methanol. Based on a worst case assessment, Solae believed that potential methanol emissions would exceed ten tons per year in the event that a theoretical "worst-case" solvent was used in the process. Since the Lecithin process began operation, however, Solae has used only food-grade ethanol that is denatured with ethyl acetate and contains no methanol. Solae stated that they would not be able to meet quality control requirements using ethanol that was denatured with methanol. As a result, Solae has never emitted methanol from the Lecithin process nor does it have any plans to use an extraction solvent for Lecithin that would result in any HAP emissions. Solae has provided a copy of the MSDS for the ethanol that they use, which confirms that there is no methanol or other HAP in this solvent. Should Solae ever resort to using ethanol containing denatured methanol or other HAP, Solae would be required to inform OAQ and apply for a permit modification pursuant to 326 IAC 2.

Existing Approvals

The Permittee has been operating under Part 70 Operating Permit No. T073-12879-00011 issued on May 14, 2002, and the following approvals:

- (a) First Administrative Amendment No. 073-17433-00011 issued on April 25, 2003.
- (b) First Significant Permit Modification No. 073-18937-00011 issued on December 23, 2004.
- (c) Second Administrative Amendment No. 073-22796-00011 issued May 12, 2006.

County Attainment Status

The source is located in Jasper County.

| Pollutant | Designation |
|-------------------|---------------------------------------------------------------------------------------------------|
| SO ₂ | Better than national standards. |
| CO | Unclassifiable or attainment effective November 15, 1990. |
| O ₃ | Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. ¹ |
| PM ₁₀ | Unclassifiable effective November 15, 1990. |
| PM _{2.5} | Unclassifiable or attainment effective April 5, 2005. |
| NO ₂ | Cannot be classified or better than national standards. |
| Pb | Not designated. |

¹Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(a) Ozone Standards

- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (2) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Jasper County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) Jasper County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.

(c) Other Criteria Pollutants
Jasper 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.

(d) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are not counted toward the determination of PSD and Emission Offset applicability.

Permitted Emission Units and Pollution Control Equipment

NOTE: All capacities were determined to be confidential by IDEM, OAQ as requested by this source and are included in a confidential OAQ file.

- (a) One (1) soybean lecithin process (ethanol extraction), identified as EU01, consisting of the following equipment, constructed in November 1999 except where otherwise noted below, and all exhausting at stack L-04:
 - (1) One (1) primary evaporator (identified as #99-2268), with volatile organic compounds reclaimed by a condenser, identified as SCER;
 - (2) One (1) extractor;

- (3) One (1) finishing evaporator (identified as Nat. Bd. #BD252), with volatile organic compounds reclaimed by a condenser, identified as SC_{PF};
 - (4) One (1) residue evaporator (identified as Nat. Bd. #BD264), with volatile organic compounds reclaimed by a condenser, identified as SC_R;
 - (5) One (1) miscella tank (identified as #2), constructed in 1998, with a maximum capacity of 1,470 gallons;
 - (6) One (1) ethanol work tank (identified as #1), constructed in 1998, with a maximum capacity of 2880 gallons;
 - (7) One (1) fixed roof dome wet storage tank (identified as #3), constructed in 1998, storing alcohol, with volatile organic compounds controlled by a refrigerated vent condenser (identified as RVC), with a maximum capacity of 1175 gallons;
 - (8) One (1) fixed roof dome storage tank for storing lecithin (identified as #4), with a maximum capacity of 1470 gallons;
 - (9) One (1) bulk container storing denatured alcohol;
 - (10) One (1) 10,000 gallon acetone storage tank;
 - (11) Three (3) 8,000 gallon storage tanks, one (1) storing water and acetone (wet acetone), one (1) storing distilled acetone (dry acetone), and one (1) storing acetone/soybean oil (miscella);
 - (12) Five (5) 10,000 gallon storage tanks, constructed in 1992, and each storing crude soybean lecithin; and
 - (13) One (1) 10,000 gallon soybean oil storage tank, constructed in 1992.
- (b) One (1) 24 MMBtu per hour spray dryer, equipped with low NO_x burner, burning natural gas (identified as #1 SD), constructed in 1978, with particulate emissions controlled by a baghouse and exhausting at stack P-8. [326 IAC 6-3-2]
 - (c) One (1) 24 MMBtu per hour spray dryer, equipped with low NO_x burner, burning natural gas (identified as #4 SD), constructed in 1991, with particulate emissions controlled by a baghouse and exhausting at stack P-14. [326 IAC 6-3-2]
 - (d) One (1) 35.4 MMBtu per hour spray, equipped with low NO_x burner, dryer burning natural gas (identified as #5 SD), constructed in 2000, with particulate emissions controlled by two (2) cyclones and one (1) baghouse, and exhausting at stack P-20. A heat recovery unit is used in conjunction with the spray dryer baghouse. [326 IAC 6-3-2]
 - (e) One (1) 29.4 MMBtu per hour North American boiler, burning natural gas, constructed in 1978, and exhausting at stack P-12. [326 IAC 6-2-3]
 - (f) One (1) 25 MMBtu per hour Centrolex boiler, burning natural gas, constructed in 1994, and exhausting at stack L-01. Under 40 CFR 60, Subpart Dc, this unit is considered to be Small Industrial-Commercial-Institutional Steam Generating Unit. [326 IAC 6-2-4]
 - (g) Product handling emission units consisting of the following:
 - (1) One (1) grinding and packaging system, constructed in 1993, with emissions controlled by a baghouse considered integral to the process and exhausting at stack L-02. [326 IAC 6-3-2]

- (2) One (1) central vacuum system, constructed in 1997, with emissions controlled by a baghouse considered integral to the process and exhausting at stack P-4. [326 IAC 6-3-2]
- (3) Three (3) product storage bins, each constructed in 1999, with emissions controlled by three aspiration baghouses considered integral to the process and exhausting at stack P-5. [326 IAC 6-3-2]
- (4) Two (2) ingredient silos, each constructed in 1973 and controlled by a baghouse considered integral to the process and exhausting at stacks P-9 and P-10, respectively. [326 IAC 6-3-2]
- (5) One (1) grinding raw material receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-15. [326 IAC 6-3-2]
- (6) One (1) ground product receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-16. [326 IAC 6-3-2]
- (7) One (1) receiver from #4 spray drier, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-17. [326 IAC 6-3-2]
- (8) One (1) raw material conveying receiver, constructed in 1998, controlled by a baghouse considered integral to the process and exhausting at stack P-18. [326 IAC 6-3-2]
- (9) Two (2) ingredient receiving storage tanks, constructed in 1999 and 2000, each controlled by a baghouse considered integral to the process and exhausting at stacks P-19 and P-29, respectively. [326 IAC 6-3-2]
- (10) One (1) soy protein product receiver, constructed in 2000, controlled by a product baghouse considered integral to the process and exhausting at stack P-21. [326 IAC 6-3-2]
- (11) One (1) totally enclosed soy protein grinder discharging to a ground product receiver considered integral to the process. [326 IAC 6-3-2]
- (12) One (1) integral soy protein ground product receiver, constructed in 2000, controlled by a remote baghouse and exhausting at stack P-22. [326 IAC 6-3-2]
- (13) One (1) soy protein remote receiver, constructed in 2000, controlled by a remote baghouse considered integral to the process and exhausting at stack P-23. [326 IAC 6-3-2]
- (14) One (1) soy protein reject bin, constructed in 2000, controlled by a reject bin baghouse considered integral to the process and exhausting at stack P-24. [326 IAC 6-3-2]
- (15) Two (2) soy protein mixers, each constructed in 2000, controlled by two mixer baghouses considered integral to the process and exhausting at stacks P-25 and P-30, respectively. [326 IAC 6-3-2]
- (16) One (1) soy protein packing surge receiver, constructed in 2000, controlled by a packaging surge receiver baghouse, considered integral to the process and exhausting at stack P-26. [326 IAC 6-3-2]
- (17) One (1) tote fill receiver, constructed in 1999, controlled by a tote fill baghouse considered integral to the process, and exhausting at stack P-27. [326 IAC 6-3-2]

- (18) One (1) packaging aspiration receiver, constructed in 1994, controlled by a packaging aspiration receiver baghouse considered integral to the process, and exhausting at stack P-28. [326 IAC 6-3-2]
- (19) One (1) product storage bin, constructed in 2000, controlled by a baghouse considered integral to the process and exhausting at stack P-31. [326 IAC 6-3-2]
- (20) Two (2) product receivers, constructed in 2000, controlled by two baghouses considered integral to the process and exhausting at stacks P-32 and P-33. [326 IAC 6-3-2]
- (21) Two (2) ingredient receiving storage tanks, constructed in 2002, controlled by two baghouses considered integral to the process and exhausting at stack P-34. [326 IAC 6-3-2]
- (22) One (1) packaging surge receiver, constructed in 2006, controlled by a baghouse considered integral to the process and exhausting at stack P-35. [326 IAC 6-3-2]
- (23) One (1) product conveyor, constructed in 2006, used to pneumatically convey soy protein to one (1) receiver, equipped with fabric filters considered integral to the process, and exhausting at stack P-36. [326 IAC 6-3-2]
- (24) One (1) grinder. [326 IAC 6-3-2]
- (25) One (1) classifier. [326 IAC 6-3-2]
- (h) Degreasing operations that do not exceed 145 gallons per 12 months, and are not subject to 326 IAC 20-6. [326 IAC 8-3-2]
- (i) Paved roads and parking lots with public access. [326 IAC 6-4]

Air Pollution Control Justification as an Integral Part of the Process

- (a) Pursuant to CP073-10488-00011, issued July 10, 1999, and T073-12879-00011, issued May 14, 2002, the cyclones and baghouses are considered as an integral part of processes exhausting at stack ID P-1, P-2, P-8, P-14, P-19, P-20, P-21, P-22, P-23, P-24, P-25, P-26, P-27, P-28, and P-36:
 - (1) The primary purpose of the cyclones and baghouses used in conjunction with the emission/process units at this source is to produce and/or collect product. These processes also convey product from process step to process step and location to location using pneumatic conveying. Numerous smaller baghouses are implemented to exhaust air from these pneumatic conveying steps.
 - (2) The baghouses are necessary for the receivers to operate because it separates the product from the conveying air stream before collection and is considered as process equipment.
 - (3) The dollar amount saved from the collected material by these control equipment is significant in comparison with the annual capital cost of the cyclone and baghouses.

IDEM, OAQ previously evaluated these justifications and agreed that these air pollution control devices are an integral part of the processes (See T073-12879-00011, issued May 14, 2002). Therefore, the permitting level will continue to be determined using the potential to emit after controls. Operating conditions in the proposed permit renewal will specify that the integral control devices shall operate at all times when the processes are in operation.

- (b) Pursuant to CP073-8249-00011, issued March 24, 1997, and T073-12879-00011, issued May 14, 2002, the three (3) polipleet receivers (fabric filters) are considered as an integral part of processes exhausting at stack ID P-15, P-16, and P-17 because the operation is pneumatic and the three (3) receivers are technically necessary for air/product separation. Note: the three (3) receivers have a collection efficiency of 99.92% of the material.

IDEM, OAQ previously evaluated these justifications and agreed that these air pollution control devices are an integral part of the processes (See T073-12879-00011, issued May 14, 2002). Therefore, the permitting level will continue to be determined using the potential to emit after controls. Operating conditions in the proposed permit renewal will specify that the integral control devices shall operate at all times when the processes are in operation.

- (c) The applicant submitted the following justifications such that the baghouses are considered as an integral part of processes exhausting at stack ID P-4, P-5, P-9, P-10, P-18, P-29, P-30, P-31, P-34, and P-35:

- (1) The primary purpose of the baghouses used in conjunction with these emission/process units are used to produce and/or collect product.
- (2) Solae points out that these collectors are more expensive than typical dust collectors, as collected material must meet food-grade specifications. If Solae were not installing these units with the intent of reusing collected material, it would be much cheaper to install a central collection system for all of the receivers combined than to have individual units for each receiver.
- (3) Solae submitted an economic analysis to IDEM in May 2008 showing an overwhelming dollar amount saved from the collected material by these control equipment (considered significant in comparison with the annual capital cost of each baghouse). This analysis is considered to be confidential business information.
- (4) P-9 and P-10 are similar to other product bin systems where integral determinations have been made by IDEM. P-18 and P-29 are raw material conveying receiver/baghouse systems that are similar to P-19 which is another conveying receiver/baghouse system where an integral equipment determination has already been made by IDEM.

IDEM, OAQ has evaluated the justifications and agreed that these baghouses will be considered as an integral part of the process. Therefore, the permitting level will be determined using the potential to emit after each of these baghouses. Operating conditions in the proposed permit will specify that these baghouses shall operate at all times when the associated process is in operation.

- (d) The applicant has submitted the following justification such that the condenser system associated with the soybean lecithin process be considered as an integral part of the ethanol extraction process:

- (1) The condenser system is necessary for the process to be economically viable, and would be present and operated regardless of air pollution control requirements.
- (2) A vapor vent control system is required under NFPA 36 for solvent extraction plants.
- (3) Solae has performed an analysis of the costs of the condenser system (both with regard to capital costs and operating costs) in comparison to the economic benefit that is achieved from the recovered solvent from the system. Solae performed this analysis based on the following information:

- Actual 1999 installed equipment costs adjusted to 2007 based on a 6% per year equipment inflation cost;
- Actual power demand from the chiller and recirculation pump;
- Actual electricity rates, solvent costs, and labor rates; and
- Certain assumptions for capital and operating costs from the EPA Control Cost Manual (contained on the EPA Technology Transfer Network web page).

The overall costs/benefits are summarized in the following table. This analysis shows that the operation of the control system provides an annual benefit of \$377,171.

| | |
|--------------------------------------|-------------|
| Direct Annual Operating Costs | \$65,112 |
| Indirect Annual Operating Costs | \$62,144 |
| Value of Recovered Solvent | \$507,426 |
| Overall Cost (Benefit) of the System | (\$377,171) |

IDEM, OAQ has evaluated the justifications and agreed that the condenser system will be considered as an integral part of the soybean lecithin process (ethanol extraction). Therefore, the permitting level will be determined using the potential to emit after the condenser system. Operating conditions in the proposed permit will specify that the condenser system shall operate at all times when the soybean lecithin process (ethanol extraction) is in operation.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

| Stack ID | Emission Unit |
|----------|----------------------------------------------|
| L-01 | Centrolex boiler |
| L-02 | grinding and packaging system |
| L-04 | soybean lecithin process (EU01) |
| P-1 | spray dryer #2 SD |
| P-2 | spray dryer #3 SD |
| P-4 | central vacuum system |
| P-5 | #1, 2, and 3 product storage bins |
| P-8 | spray dryer #1 SD |
| P-9 | #2 ingredient silo |
| P-10 | #1 ingredient silo |
| P-12 | North American boiler |
| P-14 | spray dryer #4 SD |
| P-15 | #4 grinding raw material receiver |
| P-16 | #4 ground product receiver |
| P-17 | #4 Drier 4th floor receiver |
| P-18 | raw material conveying receiver |
| P-19 | #3 ingredient receiving storage tank |
| P-20 | spray dryer #5 SD |
| P-21 | soy protein product receiver |
| P-22 | integral soy protein ground product receiver |
| P-23 | soy protein remote receiver |
| P-24 | soy protein reject bin |
| P-25 | soy protein mixer |
| P-26 | soy protein packing surge receiver |
| P-27 | tote fill receiver |
| P-28 | packaging aspiration receiver |

| Stack ID | Emission Unit |
|----------|---------------------------------------------|
| P-29 | concentration storage tank |
| P-30 | mixer |
| P-31 | product storage bin |
| P-32 | product receiver |
| P-33 | product receiver |
| P-34 | #5 and #6 ingredient receiving storage tank |
| P-35 | packaging surge receiver |
| P-36 | product conveyer |

Emission Calculations

See Appendix A of this document for detailed emission calculations.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

| Pollutant | Unrestricted PTE (tons/year) |
|-----------------|------------------------------|
| PM | 51.0 |
| PM10 | 47.8 |
| SO ₂ | 0.36 |
| VOC | 90.9 |
| CO | 49.7 |
| NO _x | 59.2 |
| HAPs | 4.0 |

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1 of all criteria pollutants is less than 100 tons per year. The source is not subject to the provisions of 326 IAC 2-7. The PTE of PM, PM₁₀, VOC, CO, and NO_x are greater than 25 tons per year. Therefore, the source will be issued an MSOP
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less 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 less than twenty-five (25) tons per year.

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 MSOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

| Process/Emission Unit | Potential To Emit (tons/year) | | | | | | |
|-------------------------------------------|-------------------------------|-------------|-----------------|-----------------|-------------|-------------|------------|
| | PM | PM10 | SO ₂ | NO _x | VOC | CO | HAPs |
| Product Handling | 37.4 | 37.4 | 0 | 0 | 0 | 0 | 0 |
| Soy Lecithin Process (Ethanol Extraction) | 0 | 0 | 0 | 0 | 87.6 | 0 | 2.1 |
| Three (3) NG-Fired Spray Dryers | 0.68 | 2.72 | 0.21 | 35.8 | 1.97 | 30.1 | 0.68 |
| Two (2) NG-Fired Boilers | 0.44 | 1.78 | 0.14 | 23.36 | 1.28 | 19.62 | 0.44 |
| Paved Roads | 8.13 | 1.59 | 0 | 0 | 0 | 0 | 0 |
| Other Activities | 4.34 | 4.34 | 0 | 0 | 0 | 0 | 0.8 |
| TOTAL | 51.0 | 47.8 | 0.36 | 59.2 | 90.9 | 49.7 | 4.0 |

- (a) This existing stationary source is not major for PSD because the emissions of each criteria pollutant are less than two hundred fifty (<250) tons per year, and it is not one of the twenty-eight (28) listed source categories.
- (b) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are not counted toward the determination of PSD and Emission Offset applicability.

Federal Rule Applicability Determination

- (a) The provisions of the New Source Performance Standard, 40 CFR 60, Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generating Units for Which Construction is Commenced After August 17, 1971 (326 IAC 12) are not included in this permit for the 29.4 MMBtu per hour and 25 MMBtu per hour boilers (identified as North American and Centrolex) because these boilers have a maximum heat input capacity less than 250 MMBtu per hour.
- (b) The provisions of the New Source Performance Standard, 40 CFR 60, Subpart Da - Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978 (326 IAC 12) are not included in this permit for the 29.4 MMBtu per hour and 25 MMBtu per hour boilers (identified as North American and Centrolex) because these boilers have a maximum heat input capacity less than 250 MMBtu per hour.
- (c) The provisions of the New Source Performance Standards, 40 CFR 60, Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12) are not included in this permit for the 29.4 MMBtu per hour and 25 MMBtu per hour boilers (identified as North American and Centrolex) because these boilers have a maximum heat input capacity less than 100 MMBtu per hour.
- (d) The provisions of the New Source Performance Standards, 40 CFR 60, Subpart Dc - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12) are not included in this permit for the 29.4 MMBtu per hour boiler (identified as North American) because this boiler was constructed in 1978, which is prior to the applicability date of this rule.
- (e) The provisions of the New Source Performance Standards, 40 CFR 60, Subpart Dc - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12) are included in this permit for the 25 MMBtu per hour process boiler (Centrolex) because this boiler has a maximum heat input capacity greater than 10 MMBtu per hour and less than 100 MMBtu per hour; and was constructed in 1994.

Nonapplicable portions of the NSPS are not included in the permit. The 25 MMBtu per hour Centrolex boiler is subject to the following sections of 40 CFR 60, Subpart Dc when burning natural gas.

- (1) 40 CFR 60.40c(a)
- (2) 40 CFR 60.40c(b)
- (3) 40 CFR 60.41c
- (4) 40 CFR 60.48c(a)(1)
- (5) 40 CFR 60.48c(g)
- (6) 40 CFR 60.48c(i)
- (7) 40 CFR 60.48c(j)

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1-1, apply to Centrolex boiler except when otherwise specified in 40 CFR 60, Subpart Dc.

- (f) The provisions of 40 CFR 60.110b, Subpart Kb - New Source Performance Standards for Volatile Organic Liquid Storage Vessels Including Petroleum Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 are not included in the permit for this source. The rule does not apply to the following units because their capacities are less than 75 cubic meters (19,813 gallons):
- (1) One (1) 10,000 gallon acetone storage tank;
 - (2) Three (3) 8,000 gallon storage tanks, one (1) storing water and acetone (wet acetone), one (1) storing distilled acetone (dry acetone), and one (1) storing acetone/soybean oil (miscella);
 - (3) Two (2) 10,000 gallon storage tanks, constructed in 1992, and each storing crude soybean lecithin;
 - (4) One (1) 10,000 gallon soybean oil storage tank, constructed in 1992;
 - (5) One (1) miscella tank (identified as #2), constructed in 1998, with a maximum capacity of 1,470 gallons;
 - (6) One (1) ethanol work tank (identified as #1), constructed in 1998, with a maximum capacity of 2,880 gallons;
 - (7) One (1) fixed roof dome wet storage tank (identified as #3), constructed in 1998, storing alcohol, with VOC emissions controlled by a refrigerated vent condenser (identified as RVC), with a maximum capacity of 1,175 gallons; and
 - (8) One (1) fixed roof dome storage tank for storing lecithin (identified as #4) with a maximum capacity of 1,470 gallons.
- (g) The provisions of 40 CFR 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning are not included in this permit for the source for the degreasing activity because this unit uses solvents that do not contain specified halogenated HAPs equal to or greater than five percent (5%) by weight.
- (h) The provisions of 40 CFR 60, Subpart DD - New Source Performance Standards for Grain Elevators are not included in the permit for this source because this source processes soy flour, not grain, as defined in 40 CFR 60.301(a).
- (i) The provisions of 40 CFR 60, Subpart VV - New Source Performance Standards for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006 are not included in this permit for this facility because it is not involved in the manufacture of any of the chemicals listed in 40 CFR 60.489.
- (j) The provisions of 40 CFR 60, Subpart RRR - New Source Performance Standards for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes is not included in this permit for any emission units because no reactor process at this facility is involved in the manufacture of any of the chemicals listed in 40 CFR 60.707.
- (k) The provisions of 40 CFR 63, Subpart GGGG - National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production) are not included in this permit for the source because this source is not a vegetable oil production process. This source extracts lecithin from soybeans.

State Rule Applicability Determination - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration)

This source is not subject to the requirements of 326 IAC 2-2 (Prevention of Significant

Deterioration) because this source does not have the potential to emit greater than two hundred fifty (250) tons per year of any criteria pollutant and this source is not one (1) of the twenty-eight (28) listed source categories (considered an extraction process with no chemical reaction).

Note: this source was constructed prior to August 7, 1977. The source was modified in 1998 and 1999 to construct the soybean lecithin process (ethanol extraction), after which the potential to emit VOC was considered to be greater than 250 tons per year because at the time of construction IDEM did not consider the condenser associated with the process as integral. However, the limits contained in TV permit no. 073-12879-00011 pursuant to 326 IAC 8-1-6 (New facilities: general reduction requirements) limited VOC emissions to below 250 tons per year and the existing source was considered a PSD minor source for VOC.

326 IAC 2-4.1-1 (Major Sources of HAPs: New Source Toxic Control)

The source wide potential to emit HAP is less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for any combination of HAPs; therefore, the requirements of 326 IAC 2-4.1 are not applicable. See history section for further details.

326 IAC 2-6 (Emission Reporting)

This source is located in Jasper County, is not required to operate under a Part 70 permit, and emits less than 5 tons per year of lead. Therefore, pursuant to 326 IAC 2-6-1(b), the source is only subject to additional information requests as provided in 326 IAC 2-6-5.

326 IAC 5-1 (Opacity Limitations)

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

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

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

The source is not subject to the requirements of 326 IAC 6-5 because this source received all the necessary construction approvals before 1985 and the potential fugitive emissions of particulate matter are less than twenty-five (25) tons per year.

326 IAC 8-6 (Organic Solvent Emission Limitations)

The provisions of 326 IAC 8-6 (Organic Solvent Emission Limitations) do not apply because the potential VOC emissions are not greater than 100 tons per year.

State Rule Applicability - Soybean Lecithin Process (Ethanol Extraction)

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

The soybean lecithin process (ethanol extraction), identified as EU01, is subject to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) because this process has potential VOC emissions greater than twenty-five (25) tons per year.

Pursuant to CP073-9923-00011, issued on January 14, 1999, and T073-12879-00011, issued May 14, 2006, and 326 IAC 8-1-6, the soy lecithin process (ethanol extraction) is required to control VOC emissions with the Best Available Control Technology (BACT). The following requirements are BACT under 326 IAC 8-1-6:

- (a) The BACT for the lecithin vent gas and overall solvent losses shall be as follows:

| Facility/Process | Control Description | VOC Emission Limit* |
|--------------------------------|-----------------------------|------------------------------|
| Vent gas from Lecithin Process | Refrigerated Vent Condenser | 2.60 lb VOC/ ton of lecithin |
| Overall Solvent Losses | None | 20.0 lb VOC/ton of lecithin |

* The VOC emission limit of 20.0 lb VOC/ton of lecithin includes the point source emission limit of 2.60 lbs VOC per ton of lecithin.

- (b) BACT for the fugitive volatile organic compounds loss shall include the following enhanced inspection, maintenance, and repair program for the solvent extraction portion:

- (1) The Permittee shall determine compliance with the standards in the table below by using the procedures of 40 CFR Part 60, Appendix A, Method 21. The instrument shall be calibrated before each day of its use by the procedures as specified in Method 21. A leak is defined as an instrument reading of 500 ppm above background or greater, except for flanges, and connectors where a leak is defined as 10,000 ppm above background.

| Equipment | Leak Standard (ppm) |
|--------------------------------|---------------------|
| Pumps | 500 |
| Valves | 500 |
| Pressure Relief Devices | 500 |
| Flanges, Connectors, and Seals | 10,000 |

- (2) The Permittee shall tag all detected leaks with a weatherproof and readily visible identification tag with a distinct number. Once a leaking component is detected, first-attempt repairs must be done within five days and be completed within 15 days of detecting the leaking components. If the repair cannot be accomplished within 15 days, then the Permittee shall send a notice of inability to repair to the OAQ within 20 days of detecting the leak. The notice must be received by IDEM, OAQ within 20 days after the leak was detected. At a minimum, the notice shall include the following:
- (A) Equipment, operator, and instrument identification number;
 - (B) Date of leak detection;
 - (C) Measured concentration (ppm) and background (ppm);
 - (D) Leak identification number associated with the corresponding tag; and
 - (E) Reason of inability to repair within 5 to 15 days of detection.
- (3) The Permittee shall maintain records of the following to verify compliance with the enhanced inspection, maintenance, and repair program;
- (A) Equipment inspected;
 - (B) Date of inspection; and
 - (C) Determination of whether a leak was detected.
- (4) If a leak is detected, the Permittee shall record the following information to verify compliance with the enhanced inspection, maintenance, and repair program:
- (A) The equipment, operator, and instrument identification number;
 - (B) Measured concentration;

- (C) Leak identification number associated with the corresponding tag;
- (D) Date of repair;
- (E) Reason for non-repair if unable to repair within 5 to 15 days of detection;
- (F) Maintenance recheck if repaired - date, concentration, background; and
- (G) Any appropriate comments.

In order to comply with the provisions of BACT, the refrigerated vent condenser (identified as RVC) shall operate at all times that the soybean lecithin process (ethanol extraction), identified as EU01, is in operation.

State Rule Applicability - Three (3) Natural Gas Fired Spray Dryers

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

- (a) The provisions of 326 IAC 8-1-6 do not apply to the spray dryer, identified as #1 SD, because this unit was constructed before January 1, 1980, the applicability date for this rule.
- (b) The provisions of 326 IAC 8-1-6 do not apply to the spray dryers, identified as #4 SD and #5 SD, because potential VOC emissions from each unit are less than twenty-five (25) tons per year.

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

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the three (3) spray dryers, identified as #1 SD, #4 SD, and #5 SD, shall each not exceed the pounds per hour limit calculated using the following equation:

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

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

The individual emission limits and process weight rates are considered to be confidential business information. Therefore, Solae has requested an alternative limit of 2.91 lbs/hour for the dryers, which is the allowable limit equal to the lowest process weight. Compliance with this limit satisfies the requirements of 326 IAC 6-3. Based on the air flow rate and outlet grain loading of the baghouses used to control particulate emissions, spray dryers #1 and #4 is able to comply with this limit. Based on stack test results completed in 2000, spray dryer #5 emits 0.21 lbs/hour. Therefore, spray dryer #5 is also able to comply with this limit.

State Rule Applicability - Natural Gas-Fired Boilers

326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating)

The one (1) natural gas-fired North American boiler is subject to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating) because it is a source of indirect heating and was existing and in operation before September 21, 1983. Pursuant to 326 IAC 6-2-3(e), the limit calculated with the following equation is greater than 0.6 lbs/MMBtu; therefore, the particulate matter emissions are limited to less than 0.6 pounds per MMBtu.

$$Pt = \frac{C * a * h}{76.5 * Q^{0.75} * N^{0.25}} = \frac{(50)(0.67)(25)}{(76.5)(29.4)^{0.75} * (1)^{0.25}} = 0.87 \text{ lbs/MMBtu}$$

Where: Pt = Pounds of particulate matter emitted per million Btu heat input;
C = Maximum ground level concentration (50);

a = Plume rise factor (0.67);
h = Stack height (25ft);
Q = Total source maximum operating capacity (29.4 MMBtu/hour); and
N = Number of stacks (1)

Based on an AP-42 emission factor of 1.86×10^{-3} lbs PM/MMBtu, the source will be able to comply with this limit.

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)

The one (1) natural gas-fired Centrolex boiler is subject to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating) because it is a source of indirect heating and was constructed after September 21, 1983. Pursuant to this rule, the particulate matter emissions are limited to less than 0.39 pounds per million Btu. This limit calculated with the following equation:

$$Pt = \frac{1.09}{Q^{0.26}} = \frac{1.09}{(54.4)^{0.26}} = 0.39 \text{ lbs/MMBtu}$$

Where: Pt = Pounds of particulate matter emitted per million Btu heat input; and
Q = Total source maximum operating capacity (29.4 + 25 = 54.4 MMBtu per hour)

Based on an AP-42 emission factor of 1.86×10^{-3} lbs PM/MMBtu, the source will be able to comply with this limit.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

This source is located in Jasper County and is not specifically listed in 326 IAC 7-4-3. The potential to emit of sulfur dioxide from each of the boilers is less than twenty-five (25) tons per year and less than ten (10) pounds per hour. Therefore, the requirements of 326 IAC 7-1.1-2, 326 IAC 7-2, and 326 IAC 7-4-2 do not apply.

326 IAC 10 (Nitrogen Oxides)

The boilers are not located in Clark or Floyd Counties, are not in a source category described in 326 IAC 10-3, are not used for generating electricity, and are not "large affected units", as that term is described in 326 IAC 10-4. Therefore, the provisions of 326 IAC 10 do not apply.

State Rule Applicability - Product Handling Activities

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

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the product handling activities shall not exceed the pounds per hour limit calculated using the following equation:

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

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

The individual emission limits and process weight rates are considered to be confidential business information. Therefore, Solae has requested an alternative limit of 2.91 lbs/hour for the product handling operations, which is the allowable limit equal to the lowest process weight. Compliance with this limit satisfies the requirements of 326 IAC 6-3. Based on the air flow rate and outlet grain loading of the baghouses used to control particulate emissions, the product handling operations are able to comply with this limit.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

The provisions of 326 IAC 8-1-6 do not apply to any of the product handling activities because these activities do not result in potential VOC emissions.

State Rule Applicability - Degreasing Operations

326 IAC 8-3 (Organic Solvent Degreasing Operations)

The degreaser facility, installed after January 1, 1980 and prior to July 1, 1990, performs organic solvent degreasing operations. Therefore, provisions of 326 IAC 8-3-2 are applicable as shown below.

- (a) Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:
 - (1) Equip the cleaner with a cover;
 - (2) Equip the cleaner with a facility for draining cleaned parts;
 - (3) Close the degreaser cover whenever parts are not being handled in the cleaner;
 - (4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
 - (5) Provide a permanent, conspicuous label summarizing the operation requirements;
 - (6) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.
- (b) The degreaser facility is not subject to the provisions of 326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control) because it is located in Jasper County and was constructed prior to July 1, 1990, the applicability date for this rule.

State Rule Applicability - Miscellaneous Cutting and Welding

The welding, brazing, and torch cutting processes are each part of maintenance activity and not a manufacturing process at the source. Therefore, the provisions of 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) do not apply.

Testing Requirements

Within five (5) years of the last compliant stack test, in order to demonstrate compliance with the BACT limit, the Permittee shall perform VOC testing for the soybean lecithin process (ethanol extraction), identified as EU01, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Compliance Determination and Monitoring Requirements

The Compliance Determination Requirements applicable to this source are as follows:

| Control | Parameter | Frequency | Range | Excursions and Exceedances | Compliance |
|-----------------------------------|-------------------|----------------|---------------------------------------------------------------------------------------|----------------------------|---------------|
| Refrigerated Vent Condenser (RVC) | Flow Rate | Hourly Average | Less than 10 degrees Fahrenheit or the range established during the latest stack test | Response Steps | 326 IAC 8-1-6 |
| | Temperature | | Range established during the latest stack test | | |
| Baghouses and | Visible Emissions | Daily | Normal - Abnormal | Response Steps | 326 IAC 6-3-2 |

| Control | Parameter | Frequency | Range | Excursions and Exceedances | Compliance |
|--------------------------------|-------------------|-----------|--------------------|----------------------------|---------------|
| Cyclone for Spray Dryers | Pressure Drop | | 0.25 to 6.0 inches | | |
| Baghouses for product handling | Visible Emissions | Daily | Normal - Abnormal | Response Steps | 326 IAC 6-3-2 |
| | Pressure Drop | | 0.25 to 6.0 inches | | |

- (a) These monitoring conditions are necessary because the Refrigerated Vent Condenser (RVC) must operate properly to ensure compliance with 326 IAC 8-1-6 (Best Available Control Technology).
- (b) These monitoring conditions are necessary because the baghouses and cyclone must operate properly at all times the spray dryers, grinding and packaging system, soy protein product receiver, totally enclosed soy protein grinder, integral soy protein ground product receiver, soy protein remote receiver, soy protein reject bin, soy protein mixer, soy protein packing surge receiver, tote fill receiver, packaging aspiration receiver, grinder, classifier, product conveyor are in operation to ensure compliance with 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

Conclusion and Recommendation

The operation of this stationary soy flour and soy protein concentrate processing plant shall be subject to the conditions of MSOP 073-23512-00011. The staff recommend to the Commissioner that this MSOP Permit be approved.

**Appendix A: Emission Calculations
Emissions From Product Handling Operations**

Company Name: Solae, LLC
Address: 413 Cressy Avenue, Remington, Indiana 47977
Initial MSOP: 073-23512-00011
Reviewer: ERG/JR
Date: June 13, 2008

Potential to Emit (PTE) PM/PM10

| Stack ID | Air Flow Rate (acfm) | Outlet Grain Loading (grain/dscf) | PTE of PM/PM10* (tons/yr) |
|--------------|----------------------|-----------------------------------|---------------------------|
| L-02 | 2,180 | 0.005 | 0.41 |
| P-4 | 3,196 | 0.005 | 0.60 |
| P-5 | 533 | 0.005 | 0.10 |
| P-8 | 35,000 | 0.005 | 6.57 |
| P-9 | 1,598 | 0.005 | 0.30 |
| P-10 | 1,598 | 0.005 | 0.30 |
| P-14 | 43,000 | 0.005 | 8.07 |
| P-15 | 1,200 | 0.005 | 0.23 |
| P-16 | 1,500 | 0.005 | 0.28 |
| P-17 | 500 | 0.005 | 0.09 |
| P-18 | 200 | 0.005 | 0.04 |
| P-19 | 520 | 0.005 | 0.10 |
| P-20 | 91,320 | 0.005 | 17.1 |
| P-21 | 3,000 | 0.005 | 0.56 |
| P-22 | 3,500 | 0.005 | 0.66 |
| P-23 | 400 | 0.005 | 0.08 |
| P-24 | 500 | 0.005 | 0.09 |
| P-25 | 470 | 0.005 | 0.09 |
| P-26 | 300 | 0.005 | 0.06 |
| P-27 | 1,598 | 0.005 | 0.30 |
| P-28 | 3,500 | 0.005 | 0.66 |
| P-29 | 520 | 0.005 | 0.10 |
| P-30 | 470 | 0.005 | 0.09 |
| P-31 | 250 | 0.005 | 0.05 |
| P-32 | 200 | 0.005 | 0.04 |
| P-33 | 200 | 0.005 | 0.04 |
| P-34 | 250 | 0.005 | 0.05 |
| P-35 | 1,200 | 0.005 | 0.23 |
| P-36 | 500 | 0.005 | 0.09 |
| Total | | | 37.4 |

*IDEM, OAQ has evaluated the air pollution control devices on the handling operations and have considered them integral parts to the processes (See TSD discussion). Therefore, the permitting level has been determined using the potential to emit after controls. Assume all PM emissions equal PM10 emissions.

Methodology

PTE of PM/PM10 (tons/yr) = Air Flow Rate (acfm) x Outlet Grain Loading (gr/scf) x 60 min/hr x 8,760 hrs/yr x 1 lb/7,000 gr x 1 ton/2,000 lbs

**Appendix A: Emission Calculations
Emissions from Soy Lecithin Process (Ethanol Extraction)**

Company Name: Solae, LLC
Address: 413 Cressy Avenue, Remington, Indiana 47977
Initial MSOP: 073-23512-00011
Reviewer: ERG/JR
Date: June 13, 2008

Potential to Emit (PTE) VOC

| Emission Unit ID | Unit Description | Maximum Throughput Rate (tons/hr) | Annual Throughput Limit (tons/yr) | VOC Emission Factor* (lbs/ton lectin) | Unlimited PTE of VOC (tons/yr) | Limited PTE of VOC (tons/yr) | Limited PTE of HAP (tons/yr) |
|------------------|--------------------------|-----------------------------------|-----------------------------------|---------------------------------------|--------------------------------|------------------------------|------------------------------|
| EU01 | Soybean Lecithin Process | 1.00 | 8,760 | 20.0 | 87.6 | 87.6 | 2.1** |
| Total | | | | | 87.6 | 87.6 | |

*VOC emission factor is based on 326 IAC 8-1-6 determination which limits VOC emissions from the vent gas lecithin process to less than 2.6 pounds VOC per ton, and from overall solvent losses to less than 20 pounds VOC per lecithin.

**Provided by source.

METHODOLOGY

Unlimited PTE of VOC/HAP (tons/yr) = Maximum Throughput Rate (tons/hr) x VOC/HAP Emission Factor (lbs/ton) x 8,760 hrs/yr x 1 ton/2,000 lbs

Limited PTE of VOC/HAP (tons/yr) = Annual Throughput Limit (tons/yr) x VOC/HAP Emission Factor (lbs/ton) x 1 ton/2,000 lbs

Appendix A: Emission Calculations
Emissions for Natural Gas Fired Spray Dryers

Company Name: Solae, LLC
Address: 413 Cressy Avenue, Remington, Indiana 47977
Initial MSOP: 073-23512-00011
Reviewer: ERG/JR
Date: June 13, 2008

1. Process Description

| Emission Unit ID | Heat Input Capacity (MMBtu/hr) | Maximum Potential Throughput (MMCF/yr) |
|------------------|--------------------------------|----------------------------------------|
| #1 SD | 24.0 | 206 |
| #4 SD | 24.0 | 206 |
| #5 SD | 35.4 | 304 |
| Total | 83.4 | 716 |

2. Combustion Emissions - Criteria Pollutants

| NOx Burner Type | Emission Factor (lbs/MMCF) | | | | | |
|------------------|----------------------------|-------|-----|-------|-----|------|
| | PM* | PM10* | SO2 | NOx** | VOC | CO |
| Ordinary Burners | 1.9 | 7.6 | 0.6 | 100 | 5.5 | 84.0 |

| Emission Unit ID | Potential To Emit (tons/yr) | | | | | |
|------------------|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| | PM | PM10 | SO2 | NOx | VOC | CO |
| #1 SD | 0.20 | 0.78 | 0.06 | 10.31 | 0.57 | 8.7 |
| #4 SD | 0.20 | 0.78 | 0.06 | 10.31 | 0.57 | 8.66 |
| #5 SD | 0.29 | 1.16 | 0.09 | 15.20 | 0.84 | 12.77 |
| Total | 0.68 | 2.72 | 0.21 | 35.8 | 1.97 | 30.1 |

* PM emission factor is for filterable PM only. PM10 emission factor is for condensable PM10 and filterable PM combined.

** Emission factors for NOx: Uncontrolled = 100 lbs/MMCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, and 1.4-2, SCC 1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03. (7/98)

Methodology

Maximum Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hrs/yr) x 1 MMCF/1,020 MMBtu

Potential To Emit (tons/year) = Maximum Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

3. Combustion Emissions - HAP Pollutants

| Emission Factor (lbs/MMCF) | | | | |
|----------------------------|-----------------|--------------|---------|---------|
| Benzene | Dichlorobenzene | Formaldehyde | Hexane | Toluene |
| 2.1E-03 | 1.2E-03 | 7.5E-02 | 1.8E+00 | 3.4E-03 |
| Cadmium | Chromium | Manganese | Mercury | Nickel |
| 1.1E-03 | 1.4E-03 | 3.8E-04 | 2.6E-04 | 2.1E-03 |

| Emission Unit ID | Potential To Emit (tons/yr) | | | | |
|------------------|-----------------------------|-----------------|----------------|----------------|----------------|
| | Benzene | Dichlorobenzene | Formaldehyde | Hexane | Toluene |
| #1 SD | 2.2E-04 | 1.2E-04 | 7.7E-03 | 1.9E-01 | 3.5E-04 |
| #4 SD | 2.2E-04 | 1.2E-04 | 7.7E-03 | 1.9E-01 | 3.5E-04 |
| #5 SD | 3.2E-04 | 1.8E-04 | 1.1E-02 | 2.7E-01 | 5.2E-04 |
| Total | 7.5E-04 | 4.3E-04 | 2.7E-02 | 6.4E-01 | 1.2E-03 |
| | Cadmium | Chromium | Manganese | Mercury | Nickel |
| #1 SD | 1.1E-04 | 1.4E-04 | 3.9E-05 | 2.7E-05 | 2.2E-04 |
| #4 SD | 1.1E-04 | 1.4E-04 | 3.9E-05 | 2.7E-05 | 2.2E-04 |
| #5 SD | 1.7E-04 | 2.1E-04 | 5.8E-05 | 4.0E-05 | 3.2E-04 |
| Total | 3.9E-04 | 5.0E-04 | 1.4E-04 | 9.3E-05 | 7.5E-04 |
| | TOTAL HAP | | | | 6.8E-01 |

HAP emission factors are from AP 42, Chapter 1.4, Tables 1.4-3 and 1.4-4. (7/98)

Methodology

Potential To Emit (tons/yr) = Maximum Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations
Emissions for Natural Gas Fired Boilers**

Company Name: Solae, LLC
Address: 413 Cressy Avenue, Remington, Indiana 47977
Initial MSOP: 073-23512-00011
Reviewer: ERG/JR
Date: June 13, 2008

1. Process Description

| Emission Unit ID | Heat Input Capacity (MMBtu/hr) | Maximum Potential Throughput (MMCF/yr) |
|-----------------------|--------------------------------|----------------------------------------|
| North American Boiler | 29.4 | 252 |
| Centrolex Boiler | 25.0 | 215 |
| Total | 54.4 | 467 |

2. Combustion Emissions - Criteria Pollutants

| NOx Burner Type | Emission Factor (lbs/MMCF) | | | | | |
|------------------|----------------------------|-------|-----|-------|-----|------|
| | PM* | PM10* | SO2 | NOx** | VOC | CO |
| Ordinary Burners | 1.9 | 7.6 | 0.6 | 100 | 5.5 | 84.0 |

| Emission Unit ID | Potential To Emit (tons/yr) | | | | | |
|-----------------------|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| | PM | PM10 | SO2 | NOx | VOC | CO |
| North American Boiler | 0.24 | 0.96 | 0.08 | 12.62 | 0.69 | 10.6 |
| Centrolex Boiler | 0.20 | 0.82 | 0.06 | 10.74 | 0.59 | 9.02 |
| Total | 0.44 | 1.78 | 0.14 | 23.4 | 1.28 | 19.6 |

* PM emission factor is for filterable PM only. PM10 emission factor is for condensable PM10 and filterable PM combined.

** Emission factors for NOx: Uncontrolled = 100 lbs/MMCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, and 1.4-2, SCC 1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03. (7/98)

Methodology

Maximum Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 (hrs/yr) x 1 MMCF/1,020 MMBtu

Potential To Emit (tons/year) = Maximum Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

3. Combustion Emissions - HAP Pollutants

| Emission Unit ID | Emission Factor (lbs/MMCF) | | | | |
|-----------------------|----------------------------|-----------------|--------------|---------|---------|
| | Benzene | Dichlorobenzene | Formaldehyde | Hexane | Toluene |
| North American Boiler | 2.1E-03 | 1.2E-03 | 7.5E-02 | 1.8E+00 | 3.4E-03 |
| Centrolex Boiler | 1.1E-03 | 1.4E-03 | 3.8E-04 | 2.6E-04 | 2.1E-03 |

| Emission Unit ID | Potential To Emit (tons/yr) | | | | |
|-----------------------|-----------------------------|-----------------|----------------|----------------|----------------|
| | Benzene | Dichlorobenzene | Formaldehyde | Hexane | Toluene |
| North American Boiler | 2.7E-04 | 1.5E-04 | 9.5E-03 | 2.3E-01 | 4.3E-04 |
| Centrolex Boiler | 2.3E-04 | 1.3E-04 | 8.1E-03 | 1.9E-01 | 3.7E-04 |
| Total | 4.9E-04 | 2.8E-04 | 1.8E-02 | 4.2E-01 | 7.9E-04 |

| Emission Unit ID | Emission Factor (lbs/MMCF) | | | | |
|-----------------------|----------------------------|----------------|----------------|----------------|----------------|
| | Cadmium | Chromium | Manganese | Mercury | Nickel |
| North American Boiler | 1.4E-04 | 1.8E-04 | 4.8E-05 | 3.3E-05 | 2.7E-04 |
| Centrolex Boiler | 1.2E-04 | 1.5E-04 | 4.1E-05 | 2.8E-05 | 2.3E-04 |
| Total | 2.6E-04 | 3.3E-04 | 8.9E-05 | 6.1E-05 | 4.9E-04 |

HAP emission factors are from AP 42, Chapter 1.4, Tables 1.4-3 and 1.4-4. (7/98)

TOTAL HAP 4.4E-01

Methodology

Potential To Emit (tons/yr) = Maximum Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2,000 lbs

Appendix A: Emission Calculations
Fugitive Emissions for Paved Roads

Company Name: Solae, LLC
Address: 413 Cressy Avenue, Remington, Indiana 47977
Initial MSOP: 073-23512-00011
Reviewer: ERG/JR
Date: June 13, 2008

1. Determine AP 42 Emission Factors

According to AP 42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

| | |
|-------------------------------------------------------------------|---------------------------------------------------|
| E = emission factor (lb/vehicle mile traveled) | |
| sL (non-Winter) = road surface silt loading (g/m ²) = | 200.0 (g/m ²) (AP 42, Table 13.2.1-3) |
| sL (Winter) = sL (non-Winter) x 4 (g/m ²) = | 200.0 (g/m ²) (AP 42, Table 13.2.1-3) |
| w = mean vehicle weight (tons) = | 12.4 tons |
| k = empirical constant = | 0.082 for PM |
| | 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 |
| p = number of days per year with 0.01 inches precipitation = | 120 |

| | |
|---------------------------------------------------------------------------------------------------------------------------|----------------|
| PM Emission Factor (non-Winter) = (0.082 x (0.6/2) ^{0.65} x (w/3) ^{1.5} - 0.00047) x (1 - 120/1460) = | 12.56 lbs/mile |
| PM10 Emission Factor (non-Winter) = (0.016 x (0.6/2) ^{0.65} x (w/3) ^{1.5} - 0.00047) x (1 - 120/1460) = | 2.45 lbs/mile |

| | |
|-----------------------------------------------------------------------------------------------------------------------|----------------|
| PM Emission Factor (Winter) = (0.082 x (2.4/2) ^{0.65} x (w/3) ^{1.5} - 0.00047) x (1 - 120/1460) = | 12.56 lbs/mile |
| PM10 Emission Factor (Winter) = (0.016 x (2.4/2) ^{0.65} x (w/3) ^{1.5} - 0.00047) x (1 - 120/1460) = | 2.45 lbs/mile |

PM Emission Factor (Average Annual) = ((PM Emission Factor (non-Winter) x 9) + (PM Emission Factor (Winter) x 3))/12

PM Emission Factor (Average Annual) = 12.56 lbs/mile

PM10 Emission Factor (Average Annual) = ((PM10 Emission Factor (non-Winter) x 9) + (PM10 Emission Factor (Winter) x 3))/12

PM10 Emission Factor (Average Annual) = 2.45 lbs/mile

2. Potential to Emit (PTE) PM/PM10

| Vehicle Type | Trip Number (trips/yr)* | Round Trip Distance (mile/trip)* | Vehicle Mile Traveled (VMT) (miles/yr) | Traffic Component (%) | PTE of PM Before Control (tons/yr) | PTE of PM10 Before Control (tons/yr) |
|-------------------------|-------------------------|----------------------------------|----------------------------------------|-----------------------|------------------------------------|--------------------------------------|
| Protein Shipping | 936 | 0.09 | 89 | 6.8% | 0.6 | 0.11 |
| Centrolex Shipping | 624 | 0.28 | 177 | 13.7% | 1.1 | 0.22 |
| Protein Receiving | 730 | 0.09 | 69 | 5.3% | 0.4 | 0.08 |
| Lecithin Receiving | 365 | 0.19 | 69 | 5.3% | 0.4 | 0.08 |
| Employee Vehicles | 4680 | 0.04 | 177 | 13.7% | 1.1 | 0.22 |
| Nightshift Week Protein | 1300 | 0.009 | 12 | 1.0% | 0.1 | 0.02 |
| Weekend Protein | 1040 | 0.009 | 10 | 0.8% | 0.1 | 0.01 |
| Daily Centrolex | 2080 | 0.19 | 394 | 30.4% | 2.5 | 0.48 |
| Weekend Day Centrolex | 416 | 0.19 | 79 | 6.1% | 0.5 | 0.10 |
| Nightshift Centrolex | 1092 | 0.19 | 207 | 16.0% | 1.3 | 0.25 |
| Visitors | 1300 | 0.009 | 12 | 1.0% | 0.1 | 0.02 |
| Total | | | 1,295 | 100% | 8.13 | 1.59 |

* 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 = Average Weight of Vehicles (tons) x Traffic Component (%)

PTE of PM/PM10 Before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors (Average Annual) (lbs/mile) x 1 ton/2000 lbs

**Appendix A: Emission Calculations
Emissions Summary**

Company Name: Solae, LLC
Address: 413 Cressy Avenue, Remington, Indiana 47977
Initial MSOP: 073-23512-00011
Reviewer: ERG/JR
Date: June 13, 2008

| Emission Units | Potential To Emit (tons/yr) | | | | | | |
|-------------------------------------------|-----------------------------|-------------|-------------|-------------|-------------|-------------|------------|
| | PM | PM10 | SO2 | NOx | VOC | CO | HAPs |
| Product Handling | 37.4 | 37.4 | 0 | 0 | 0 | 0 | 0 |
| Soy Lecithin Process (Ethanol Extraction) | 0 | 0 | 0 | 0 | 87.6 | 0 | 2.1 |
| Three (3) NG-Fired Spray Dryers | 0.68 | 2.72 | 0.21 | 35.8 | 1.97 | 30.1 | 0.68 |
| Two (2) NG-Fired Boilers | 0.44 | 1.78 | 0.14 | 23.36 | 1.28 | 19.62 | 0.44 |
| Paved Roads | 8.13 | 1.59 | 0 | 0 | 0 | 0 | 0 |
| Other Activities* | 4.34 | 4.34 | 0 | 0 | 0 | 0 | 0.8 |
| TOTAL | 51.0 | 47.8 | 0.36 | 59.2 | 90.9 | 49.7 | 4.0 |

* Includes emissions provided by source for HCL tank vent and grinding and packaging system.