

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Cargill Grain Division
321 West First Road
LaPaz, Indiana 46537**

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-099-9657-00011	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM), and presented in the permit application.

A.1 General Information

The Permittee owns and operates a grain elevator.

Responsible Official: Mr. Jim Simpson
Source Address: 321 West First Road, LaPaz, Indiana 46537
Mailing Address: 321 West First Road, LaPaz, Indiana 46537
SIC Code: 5153
County Location: Marshall
County Status: Attainment for all criteria pollutants
Source Status: Major for Part 70 Permit Program.
The source chose to operate under the Permit by Rule Program
Major Source, under PSD Rules

A.2 Emission Units and Pollution Control Equipment Summary

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

One (1) new Zimmerman column type grain dryer (model AP-4000), which has a maximum throughput rating of 4,000 bushels per hour.

The dryer has a maximum heat input capacity of 45 million British Thermal Units per hour (Btu/hr)

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source will be required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- a. It is a major source, as defined in 326 IAC 2-7-1(22). The source, however, chose to operate under the Permit by Rule Program, 326 IAC 2-10.

SECTION B GENERAL CONSTRUCTION AND OPERATION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

Construction Conditions [326 IAC 2-1-3.4]

B.1 General Construction Conditions

- (a) The data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
- (b) This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Effective Date of the Permit [IC13-15-5-3]

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

B.3 Revocation of Permits [326 IAC 2-1-9(b)]

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

B.4 Permit Review Rules [326 IAC 2]

Notwithstanding Construction Condition No. B.5, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.5 First Time Operation Permit [326 IAC 2-1-4]

This document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
- (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
- (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (d) The Permittee is subject to the requirement of Part 70 permit. However, the source chose to operate under the Permit by Rule, 326 IAC 2-10.

Operation Conditions

B.6 General Operation Conditions

- (a) The data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
- (b) The Permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC13-17) and the rules promulgated thereunder.

B.7 Preventive Maintenance Plan [326 IAC 1-6-3]

Pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:

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

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

B.8 Transfer of Permit [326 IAC 2-1-6]

Pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this grain elevator is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

B.9 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and 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 326 IAC 2-1 (Permit Review Rules).

B.10 Availability of Permit [326 IAC 2-1-3(l)]

Pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of the source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitation and Standards

C.1 PSD Major Source Status [326 IAC 2-2] [40 CFR 52.21]

The source is an existing major source, because the potential to emit (PTE) particulate matter (PM) are greater than 250 tons per year.

C.2 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. 326 IAC 4-1-3(a)(2)(A) and (B) are not federally enforceable.

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

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

C.4 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). Rule 326 IAC 6-4-2(4) is not federally enforceable.

C.5 Asbestos Abatement Projects - Accreditation [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

Prior to the commencement of any demolition or renovation activities, the Permittee shall use an Indiana accredited asbestos inspector to inspect thoroughly the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos containing material. The requirement that the inspector be accredited is federally enforceable.

Testing Requirements

C.6 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 methods approved by the IDEM, OAM.

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 Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days before the intended test date.

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Monitoring Requirements

C.7 Compliance Monitoring

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, no more than ninety (90) days after receipt of this permit. If due to circumstances beyond its control, this schedule cannot be met, the Permittee shall notify:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

in writing, no more than ninety (90) days after receipt of this permit, with full justification of the reasons for the inability to meet this date and a schedule which it expects to meet. If a denial of the request is not received before the monitoring is fully implemented, the schedule shall be deemed approved.

C.8 Monitoring Methods [326 IAC 3]

Any monitoring or testing performed to meet the requirements of this permit shall be performed, according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.9 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

- (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
 - (3) 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 Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory 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) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

Record Keeping and Reporting Requirements

C.10 Monitoring Data Availability

- (a) With the exception of performance tests conducted in accordance with Section C-Performance Testing. All observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.11 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 corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (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, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected facility.

C.12 General Record Keeping Requirements

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM, representative, for a minimum of three (3) years. They may be stored elsewhere for the remaining two (2) years providing they are made available within thirty (30) days after written request.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;

- (4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.13 General Reporting Requirements

- (a) To affirm that the source has met all the requirements stated in this permit the source shall submit a Quarterly Compliance Report. Any deviation from the requirements and the date(s) of each deviation must be reported.
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.
- (d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.
- (e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
 - (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
 - (2) An emergency as defined in 326 IAC 2-7-1(12); or
 - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
 - (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.

- (g) 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.

Stratospheric Ozone Protection

C.14 Compliance with 40 CFR 82 and 326 IAC 22-1

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

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

SECTION D.1

FACILITY CONDITIONS

One (1) new Zimmerman column type grain dryer (model AP-4000), which has a maximum throughput rating of 4,000 bushels per hour.

The dryer has a maximum heat input capacity of 45 million British Thermal Units per hour (Btu/hr).

Emissions Limitation and Standards

D.1.1 Particulate Matter (PM) Emissions Limit [326 IAC 2-2]

The grain to be dried by the new Zimmerman column type grain dryer shall be limited to 7,270,800 bushels per year, rolled on a monthly basis. This grain drying limit will give an equivalent PM emissions of less than 25 tons per year (significant level for an existing major source), rolled on a monthly basis. This grain limit will also limit the PM10 emissions to below 15 tons per year. Compliance with this Operation Condition will make 326 IAC 2-2, the Prevention of Significant Deterioration (PSD) and 40 CFR 52.21 not applicable.

D.1.2 Visible Emissions Limitation [326 IAC 5-1-2]

Pursuant to 5-1-2 (Visible Emissions Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions from the Zimmerman column type dryer shall meet the following:

- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

D.1.3 Standards of Performance for Grain Elevators [40 CFR § 60.302, Subpart DD]

The column type grain dryer shall be constructed with a perforation diameter less than 0.094 inches. Therefore, § 60.302 Standard for Particulate Matter, Subpart DD will not apply.

D.1.4 PM Process Operation [326 IAC 6-3]:

Pursuant to 326 IAC 6-3 (Process Operations), the new Zimmerman column type grain dryer shall have a PM allowable emissions of 5.5 pounds per hour (lb/hr). The PM allowable emissions shall be determined using the following equation:

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

Where: E = PM allowable emissions in pounds hour
P = Process weight rate in tons per hour

Compliance with this Operation Condition will also satisfy Operation Condition D.1.1.

D.1.5 Preventive Maintenance Plan

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

Compliance Monitoring Requirements

D.1.6 Visible Emission Notations

- (a) Daily visible emission notations from the grain dryer vents and openings shall be performed once daily 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

D.1.7 Testing Requirements

Testing of this facility is not required by this permit. However, if testing is required, compliance with the PM limit specified in Condition D.1.1 and D.1.4 shall be determined by a performance test conducted in accordance with Section C - Performance Testing. This does not preclude testing requirements on this facility.

Record Keeping and Reporting Requirements

D.1.8 Record Keeping Requirements

- (a) To document compliance with Condition D.1.2, the Permittee shall maintain records of daily visible emission notations of the new Zimmerman column type dryer exhaust.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.9 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

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

Quarterly Report

Source Name: Cargill Grain Division
Source Address: 321 West First Road, LaPaz, Indiana 46537
Mailing Address: 321 West First Road, LaPaz, Indiana 46537
Construction Permit No.: CP099-9657-00011
Facility: New Zimmerman Column Type Dryer with 0.078 inches plate perforation diameter
Parameter: PM
Limit: 7,270,800 bushels per year, rolled on a monthly basis

Year: _____

Month	Column 1	Column 2	Column 1 + 2
	This Month	Previous 11 Months	12 Month Total

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: Cargill Grain Division
 Source Location: 321 West First Road, LaPaz, Indiana 46537
 County: Marshall
 Construction Permit No.: CP-099-9657-00011
 SIC Code: 5153
 Permit Reviewer: Aida P. De Guzman

The Office of Air Management (OAM) has reviewed an application from Cargill Grain Division, LaPaz Facility relating to the construction and operation of the following facility used in the grain elevator, which stores corn, wheat and soybeans, etc:

One (1) new Zimmerman column type grain dryer (model AP-4000), which has a maximum throughput rating of 4,000 bushels per hour.

The dryer has a maximum heat input capacity of 45 million British Thermal Units per hour (Btu/hr)

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
**EP	dryer	25-75	23	216,000	210
* There is no stack from the grain dryer, emissions are exhausted from the perforated plates					

Recommendation

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

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

A complete application for the purposes of this review was received on April 7, 1998, with additional information received on May 13, 1998.

Emissions Calculations

Using the Interim AP-42 Emission Factor SCC 3-02-005-05, SCC 3-02-006-06, and SCC 3-02-005-04.

(a) Proposed Column Grain Dryer:

$$4,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} = 120 \text{ tons/hr}$$

$$\begin{aligned} \text{PM Emissions} &= 120 \text{ tons/hr} * 0.22 \text{ lb PM/ton grain} * 8760 \text{ hr/yr} * \text{ton}/2000 \text{ lb} \\ &= 115.6 \text{ tons/yr} \end{aligned}$$

$$\begin{aligned} \text{PM10 Emissions} &= 120 \text{ ton/hr} * 2.5 \text{ DR} * 0.022 \text{ lb PM10/ton/grain} * 8760 \text{ hr/yr} * \\ &\quad \text{ton}/2000 \text{ lb} \\ &= 28.9 \text{ tons/yr} \end{aligned}$$

(b) Natural Gas Combustion: See Page 1 of 1 TSD Appendix A for detailed emission calculations.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	232.6	118.3
Particulate Matter (PM10)	31.6	31.6
Sulfur Dioxide (SO ₂)	0.1	0.1
Volatile Organic Compounds (VOC)	0.6	0.6
Carbon Monoxide (CO)	6.9	6.9
Nitrogen Oxides (NO _x)	27.6	27.6
Single Hazardous Air Pollutant (HAP)	0.0	0.0
Combination of HAPs	0.0	0.0

(a) Allowable emissions are determined from the applicability of rule 326 IAC 6-3. This rule mandates a PM emission for the grain dryer, using the following equation:

$$\begin{aligned} E &= 55.0 P^{0.11} - 40 \\ &= 55.0 (120)^{0.11} - 40 \\ &= 53.12 \text{ lb/hr} \\ &= 232.6 \text{ ton/yr} \end{aligned}$$

Where:

$$\begin{aligned} E &= \text{PM emissions limit, in pounds per hour (lb/hr)} \\ P &= \text{Process weight rate in tons/hr} \\ &= 120 \text{ ton/hr} \end{aligned}$$

- (b) The potential emissions before control are less than the allowable emissions, therefore, the potential emissions before control are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of Nitrogen Oxides (NO_x), PM and

PM10 are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Marshall 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 and 40 CFR 52.21.
- (b) Marshall County has been classified as attainment or unclassifiable for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD Definition (emissions after controls, based on the issued permit):

Permit No.	Operation - Permitted Emissions (ton/yr)
OP 50-11-93-0143	Unloading-PM Emissions - 187.5 ton/yr Internal Handling PM Emissions - 134.6 ton/yr Loading-PM Emissions - 31.5 ton/yr Grain Loadout-PM Emissions - <u>98.2 tons/yr</u> 451.8 ton/yr
	Unloading-PM10 Emissions - 62 ton/yr Internal handling PM10 Emissions - 71.5 ton/yr Loading-PM10 Emissions - 12.0 ton /yr Grain Loadout PM10 Emissions - <u>20.5 ton/yr</u> 166.0 ton/yr
OP 50-11-93-0144	Dryer-PM Emissions - 43.4 ton/yr Dryer-PM10 Emissions - 0.96 ton/yr
TOTAL	PM Emissions - 495.2 tons/yr PM10 Emissions - 166.96 ton/yr

- (a) Since no limit is set in the permit and no TSD to explain the emissions, the facilities emissions permitted under the referenced permits will be re-calculated as follows:

Operation Permit, OP50-11-93-0143:

Using the Interim AP-42 Emission Factor dated July, 1997, SCC 3-02-005-05, SCC 3-02-006-06, and SCC 3-02-005-04.

Operations permitted:

(1) Unloading/Receiving Emissions:

Uncontrolled Unloading/Receiving PM Emissions

$$\begin{aligned} & 16,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr} \\ & = 4,204,800 \text{ ton/yr} \\ & = 4,204,800 \text{ ton/yr} * 0.18 \text{ lb/ton} * \text{ton}/2000 \text{ lb} \\ & = 378 \text{ ton/yr} \end{aligned}$$

Controlled Unloading/Receiving PM Emissions, since dumpits are semi-covered.
 $378 (1-0.50) = 187.5 \text{ tons/yr}$

Uncontrolled Unloading PM10 Emissions

$$\begin{aligned} & 16,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr} \\ & = 4,204,800 \text{ ton/yr} * 0.059 \text{ lb/ton} * \text{ton}/2000 \text{ lb} \\ & = 124 \text{ ton/yr} \end{aligned}$$

Controlled Unloading PM10 Emissions, since dumpits are semi-covered.
 $124 \text{ tons/yr} (1-0.50) = 62 \text{ tons/yr}$

(2) Internal Handling Emissions:

Uncontrolled Internal Handling PM Emissions

$$\begin{aligned} & 40,000 \text{ bushels/hr} * 60 \text{ lb/bushels} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr} \\ & = 10,512,000 \text{ ton/yr} * 0.061 \text{ lb/ton} * \text{ton}/2000 \text{ lb} \\ & = 336.4 \text{ ton/yr} \end{aligned}$$

Controlled Internal Handling PM Emissions (Enclosed conveyor)
 $336.4 \text{ ton/yr} (1-0.60) = 134.6 \text{ tons/yr}$

Uncontrolled Internal Handling PM10 Emissions

$$\begin{aligned} & 40,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr} \\ & = 10,512,000 \text{ ton/yr} * 0.034 \text{ lb/ton} * \text{ton}/2000 \text{ lb} \\ & = 178.7 \text{ ton/yr} \end{aligned}$$

Controlled Internal Handling PM10 Emissions
 $178.7 \text{ ton/yr} (1-0.60) = 71.5 \text{ tons/yr}$

(3) Loading to Bins Emissions:

Uncontrolled Loading to Bins PM Emissions

$$\begin{aligned} & 30,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr} \\ & = 7,884,000 \text{ ton/yr} * 0.02 \text{ lb/ton} * \text{ton}/2000 \text{ lb} \\ & = 78.8 \text{ ton/yr} \end{aligned}$$

Controlled Loading to Bins PM Emissions (Enclosed conveyor to the bins)
 $78.8 \text{ ton/yr} (1-0.60) = 31.5 \text{ tons/yr}$

Uncontrolled Loading to Bins PM10 Emissions
 $30,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr}$
 $= 7,884,000 \text{ ton/yr} * 2.5 \text{ DR} * 0.003 \text{ lb/ton} * \text{ton}/2000 \text{ lb}$
 $= 29.6 \text{ ton/yr}$

Controlled Loading to Bins PM10 Emissions
 $29.6 \text{ ton/yr} (1-0.60) = 12 \text{ tons/yr}$

(4) Grain Loadout (Truck) Emissions:

Uncontrolled Grain Loadout (Truck) PM Emissions
 $8,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr}$
 $= 2,102,400 \text{ ton/yr} * 0.086 \text{ lb/ton} * \text{ton}/2000 \text{ lb}$
 $= 90.4 \text{ tons/yr}$

Controlled Grain Loadout Semi-covered (Truck,) PM Emissions
 $90.4 \text{ ton/yr} (1-0.50) = 45.2 \text{ tons/yr}$

Uncontrolled Grain Loadout (Truck) PM10 Emissions
 $8,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr}$
 $= 2,102,400 \text{ ton/yr} * 0.029 \text{ lb/ton} * \text{ton}/2000 \text{ lb}$
 $= 31 \text{ tons/yr}$

Controlled Grain Loadout Semi-covered (Truck,) PM10 Emissions
 $31 \text{ tons/yr} (1-0.50) = 16.0 \text{ ton/yr}$

(5) Grain Loadout (Rail) Emissions:

Uncontrolled Grain Loadout (Rail) PM Emissions
 $30,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr}$
 $= 7,884,000 \text{ ton/yr} * 0.027 \text{ lb/ton} * \text{ton}/2000 \text{ lb}$
 $= 106 \text{ ton/yr}$

Controlled Grain Loadout, (Rail) PM Emissions (Adjust Sleeve to control PM)
 $106 (1-0.50) = 53 \text{ ton/yr}$

Uncontrolled Grain Loadout (Rail) PM10 Emissions
 $30,000 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb} * 8760 \text{ hr/yr}$
 $= 7,884,000 \text{ ton/yr} * 0.0022 \text{ lb/ton} * \text{ton}/2000 \text{ lb}$
 $= 9.0 \text{ ton/yr}$

Controlled Grain Loadout, (Rail) PM10 Emissions (Adjust Sleeve to control PM)
 $9.0 (1-0.50) = 4.5 \text{ ton/yr}$

Operation Permit, OP50-11-93-0144:

Operation permitted: One grain dryer with a capacity of 1,500 bushels of grain per hour

(1) Uncontrolled/Controlled Grain Dryer PM Emissions
 $1,500 \text{ bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb}$
 $= 45 \text{ tons/hr} * 0.22 \text{ lb PM/ton grain} * 8760 \text{ hr/yr} * \text{ton}/2000 \text{ lb}$
 $= 43.4 \text{ tons/yr}$

Uncontrolled/Controlled PM10 Emissions
 $45 \text{ ton/hr} * 2.5 \text{ DR} * 0.022 \text{ lb PM10/ton/grain} * 8760 \text{ hr/yr} * \text{ton}/2000 \text{ lb}$
 $= 0.96 \text{ tons/yr}$

- (b) This existing source is a major stationary source because PM an attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	24.0	6.0	0.1	0.6	6.9	27.6
PSD Significant Level	25	15	40	40	100	40

- (1) The amount of grain to be dried by the proposed column dryer shall be limited as follows to avoid the requirements of 40 CFR 52.21, PSD:

$$\frac{\text{Potential amount of grain to be dried in bushels/hr, } 4000 \text{ bushels/hr} * X, \text{ bushels limit per hr}}{\text{Potential PM emissions, } 115.6 \text{ ton/yr}} = \frac{\text{PM limit, } 24 \text{ tons/yr}}{\text{PM limit, } 24 \text{ tons/yr}}$$

$$X, \text{ Limit} = 830 \text{ grain bushels per hour} * 8760 \text{ hr/yr}$$

$$= 7,270,800 \text{ bushels/year}$$

PM10 emissions will also be scaled down based on the grain limit as follows.

$$830 \text{ limit, bushels/hr} * 60 \text{ lb/bushels wheat} * \text{ton}/2000 \text{ lb}$$

$$24.9 \text{ ton/hr} * 2.5 \text{ DR} * 0.022 \text{ lb PM10/ton/grain} * 8760 \text{ hr/yr} * \text{ton}/2000 \text{ lb}$$

$$= 6.0 \text{ tons/yr}$$

- (2) Natural Gas Combustion Emissions will also be scaled down as follows based on the 24 tons of PM limit (Less gas is combusted if there is less grain dried):

$$\text{PM} = \text{PM10} = \frac{24 \text{ tons/yr} * 2.7 \text{ ton/yr}}{115.6 \text{ ton/yr}}$$

$$= 0.56 \text{ ton/yr}$$

$$\begin{aligned}\text{SO}_2 &= \frac{24 \text{ ton/yr} * 0.1 \text{ ton/yr}}{115.6 \text{ ton/yr}} \\ &= 0.02 \text{ ton/yr}\end{aligned}$$

$$\begin{aligned}\text{NOx} &= \frac{24 \text{ ton/yr} * 27.6 \text{ ton/yr}}{115.6 \text{ ton/yr}} \\ &= 5.7 \text{ ton/year}\end{aligned}$$

$$\begin{aligned}\text{VOC} &= \frac{24 \text{ ton/yr} * 0.6 \text{ ton/yr}}{115.6 \text{ ton/yr}} \\ &= 0.12 \text{ ton/yr}\end{aligned}$$

$$\begin{aligned}\text{CO} &= \frac{24 \text{ ton/yr} * 6.9 \text{ ton/yr}}{115.6 \text{ ton/yr}} \\ &= 1.4 \text{ ton/yr}\end{aligned}$$

Methodology:

$$\text{Emissions Limit} = \frac{\text{PM limit for the grain drying, ton/yr} * \text{pot'l pollutant emissions from natural gas, ton/yr}}{\text{Pot'l emissions fr. the grain drying, ton/yr}}$$

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program):

The source is subject to the Part 70 Permit Program requirements. The source indicated that they will operate under the Permit by Rule Program.

Federal Rule Applicability

(a) New Source Performance Standards:

40 CFR § 60.300, Subpart DD- Standards of Performance for Grain Elevators. The provisions of this subpart apply to each affected facility at any grain terminal elevator or any grain storage elevator. The affected facilities are each truck loading and unloading station, barge and ship unloading and unloading station, railcar loading and unloading station, grain dryer and all grain handling operations, which commences construction, modification, or reconstruction after August 3, 1978. The source, which is a grain terminal elevator is subject to this NSPS.

The proposed column type grain dryer, with a column plate perforation diameter of 0.078 inches, which is less than 0.094 inches is not subject to any requirements under this NSPS.

(b) National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

There are no NESHAPs 40 CFR Part 63, applicable to the proposed column type grain dryer.

State Rule Applicability

- (a) 326 IAC 2-6 (Emission Reporting)
This facility is not subject to 326 IAC 2-6 (Emission Reporting), because the source potential to emit (PTE) of PM10 is less than 100 tons per year.
- (b) 326 IAC 6-3 (Process Operations Particulate Limit)
This rule mandates a PM emission for the column grain dryer, using the following equation:
- $$\begin{aligned} E &= 55.0 P^{0.11} - 40 \\ &= 55.0 (120)^{0.11} - 40 \\ &= 53.12 \text{ lb/hr} \\ &= 232.6 \text{ ton/yr, since this limit exceeds 25 tons/year it will be truncated to} \\ &\quad 5.5 \text{ lb/hr which is equivalent to 24 tons/yr.} \\ &\quad \text{The source is in compliance with this rule by limiting the amount of bushels} \\ &\quad \text{to be dried.} \end{aligned}$$
- Where:
- E = PM emissions limit, in pounds per hour (lb/hr)
P = Process weight rate in tons/hr
= 120 ton/hr
- (c) 326 IAC 8 (Volatile Organic Sources)
There are no rules under Article 8 that will apply to the column type grain dryer, because no VOC is emitted.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

None of these listed air toxics will be emitted from this proposed construction.

Conclusion

The construction of this column type grain dryer will be subject to the conditions of the attached proposed **Construction Permit No. CP-099-9657-00011**.

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: Cargill Grain Division
 Source Location: 321 West First Road, LaPaz, Indiana 46537
 County: Marshall
 Construction Permit No.: CP-099-9657-00011
 SIC Code: 5153
 Permit Reviewer: Aida P. De Guzman

On June 8, 1998 the Office of Air Management (OAM) had a notice published in the Plymouth Pilot News, Plymouth, Indiana, stating that Cargill Grain Division had applied for a construction permit to construct and operate one (1) new Zimmerman column type grain dryer with no control equipment. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On June 23, 1998 Cargill Grain Division submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows (changes are bolded for emphasis):

Comment 1: Proposed Condition D.1.6 Opacity Reading on Page 14 of 16 of the draft permit, the Compliance Monitoring Requirements indicates that a visible emissions limit in Operation D.1.2 shall be determined using Method 9 and the procedure in 40 CFR § 60.11".

Cargill requests that the Compliance Monitoring specified under D.1.2 be changed from Method 9 into IDEM's Visible Emission Notations Method. To perform Method 9 certification Cargill feels that this requirement is burdensome and costly.

Response 1: Proposed Condition D.1.6 Opacity Reading under the **Compliance Monitoring Requirements** was inadvertently added in the proposed permit. Method 9 and the procedure in 40 CFR § 60.11 required under the New Source Performance Standards (NSPS), Subpart DD will not be necessary, because the new Zimmerman column type grain dryer is not subject to any requirements under the New Source Performance Standards (NSPS), Subpart DD. Proposed Condition D.1.6 Opacity Reading will be replaced by the following condition:

D.1.6 Visible Emission Notations

- (a) Daily visible emission notations from the grain dryer vents and openings shall be performed once daily 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Mail to: Permit Administration & Development Section
Office Of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Cargill Grain Division
321 West First Road
LaPaz, Indiana 46537

Affidavit of Construction

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

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)
4. I hereby certify that Cargill Grain Division, 321 West First Road, LaPaz, Indiana 46537, has constructed the One (1) new Zimmerman column type grain dryer (model AP-4000), which has a maximum throughput rating of 4,000 bushels per hour. The dryer has a maximum heat input capacity of 45 million British Thermal Units per hour (Btu/hr) in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on April 7, 1998 and as permitted pursuant to **Construction Permit No. CP-099-9657, Plant ID No. 099-00011** issued on _____.
5. Additional (?operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit. (Delete this statement if it does not apply.)
6. I hereby certify that Cargill Grain Division, is now subject to the Title V program. The source however, indicated that it will operate under the Permit by Rule program, 326 IAC 2-10.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of
Indiana on this _____ day of _____, 19 _____.

My Commission expires: _____

Signature

Name (typed or printed)

**Appendix A: Emissions Calculations
 Natural Gas Combustion Only
 10 > MM BTU/HR <100
 Small Industrial Boiler**

Company Name: Cargill Grain Division
Address City IN Zip: 1300 West First Street, LaPaz, IN 46537
CP: 099-9657
Plt ID: 099-00011
Reviewer: Aida P. De Guzman
Date: 05/12/98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

45.0

394.2

Emission Factor in lb/MMCF	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	13.7	13.7	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	2.7	2.7	0.1	27.6	0.6	6.9

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: Uncontrolled = 140, Low NOx Burner = 81, Flue gas recirculation = 30

Emission Factors for CO: Uncontrolled = 35, Low NOx Burner = 61, Flue gas recirculation = 37

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton