CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT

Archer Daniels Midland Company (ADM) / Countrymark
County Roads 300 South & 275 West
Clymers, Indiana 46947

is hereby authorized to construct

a modification of the existing Logansport Grain Terminal, consisting of the addition of the following equipment:

one (1) 20.9 million (MM) British thermal units per hour (Btu/hr), natural gas fired column grain dryer (ID No. dryer #2), processing a maximum of 4,000 bushels per hour, with a column plate perforation of less than 0.094 inches.

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-017-8604-00017	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

1. That 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).

2. That 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.

Effective Date of the Permit

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

4. That 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.

5. That notwithstanding Construction Condition No. 6, 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).

First Time Operation Permit

6. That 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 operation permit will be subject to annual operating permit fees pursuant to 26 IAC 2-7-19 (Fees).

   (e) The Permittee has submitted a Part 70 Permit Transition application for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 Permit Transition application.

NSPS Reporting Requirement

7. That pursuant to the New Source Performance Standards (NSPS), Part 60.300, Subpart DD, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

   (a) Commencement of construction date (no later than 30 days after such date);

   (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date); and

   (c) Actual start-up date (within 15 days after such date).

   Reports are to be sent to:

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

   The application and enforcement of these standards have been delegated to the IDEM-OAM. The requirements of 40 CFR Part 60 are also federally enforceable.

8. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1. That 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).

2. That 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 (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That 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.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):

(a) In the event that ownership of the Logansport Grain Terminal 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.

Permit Revocation

5. That 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).

Availability of Permit

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

Annual Emission Reporting

7. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual statement must be submitted to:

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

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

8. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions 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.

Particulate Matter Limitation

9. That pursuant to 326 IAC 6-3 (Process Operations), the one (1) 4,000 bushels per hour natural gas fired column grain dryer (ID No. dryer #2) shall not exceed the allowable particulate matter (PM) emission rate of 52.4 pounds per hour.

Open Burning

10. That 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.

Emergency Reduction Plans

11. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

   (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

   (b) These ERPs shall be submitted for approval to:

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

   within 180 calendar days from the issuance date of this permit.

   (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

   (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

   (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

   (g) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	Archer Daniels Midland Company (ADM)/Countrymark
Source Location:	County Roads 300 South & 275 West, Clymers, Indiana 46947
County:	Cass
Construction Permit No.:	CP-017-8604-00017
SIC Code:	5153
Permit Reviewer:	Luke McHale/Enviroplan

The Office of Air Management (OAM) has reviewed an application from Archer Daniels Midland Company (ADM)/Countrymark relating to the construction and operation of a modification of the existing Logansport Grain Terminal, consisting of the addition of the following equipment:

one (1) 20.9 million (MM) British thermal units per hour (Btu/hr), natural gas fired column grain dryer (ID No. dryer #2), processing a maximum of 4,000 bushels per hour.

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 May 21, 1997.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (5 pages).

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)	229.6	85.5
Particulate Matter (PM10)	229.6	22.3
Sulfur Dioxide (SO_2)	--	0.1
Volatile Organic Compounds (VOC)	--	0.3
Carbon Monoxide (CO)	--	3.2
Nitrogen Oxides (NO_x)	--	12.8
Single Hazardous Air Pollutant (HAP)	--	0.0
Combination of HAPs	--	0.0

(a) Allowable emissions of PM and PM10 are determined from the applicability of rule 326 IAC 6-3-2. See discussion of 326 IAC 6-3-2, under the State Rules Section, page 4, of this TSD.

(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 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 and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Cass 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) Cass County has been classified as attainment or unclassifiable for all 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 8,760 hours of operation per year):

Pollutant	Emissions (ton/yr)
PM	130.7
PM10	33.6
SO_2	0.1
VOC	0.3
CO	3.2
NO_X	12.8

(a) This existing source is **not** a major stationary source because no 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.

(b) Due to insufficient information in the existing permits for the existing equipment, these emissions were calculated (see TSD Appendix A, pages 4-5) based on information submitted by the applicant regarding the capacities of the existing permitted equipment. The applicant has requested that a public and a confidential copy of the emission calculations for the existing equipment be made so that the operation capacities and annual throughputs are kept confidential.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO_2 (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO_X (ton/yr)
Proposed Modification	85.5	22.3	0.1	0.3	3.2	12.8
PSD Level	250	250	250	250	250	250

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)

This existing source has submitted a Part 70 Permit Transition application on December 13, 1996, to satisfy the requirements of 326 IAC 2-7. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 Permit Transition application.

Federal Rule Applicability

The one (1) 4,000 bushel per hour column grain dryer (ID No. dryer #2) is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.300, Subpart DD), because it is an affected facility (grain dryer) at a grain terminal elevator that has a permanent storage capacity greater than 2.5 million bushels and was constructed after August 3, 1978. However, none of the provisions of this rule are applicable, per 40 CFR Part 60.302(a), because the grain dryer does not have a column plate perforation exceeding 0.094 inches.

State Rule Applicability

326 IAC 1-5-2 (Emergency Reduction Plans)

The Logansport Grain Terminal is subject to the requirements of 326 IAC 1-5-2 (Emergency Reduction Plans) because it has source wide potential emissions of a pollutant (PM) greater than 100 tons per year. Pursuant to this rule, Archer Daniels Midland Company (ADM)/Countrymark shall prepare and submit Emergency Reduction Plans (ERPs) to the Indiana Department of Environmental Management (IDEM), for approval.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source has the potential to emit more than 100 tons/yr of PM-10. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 5-1-2 (Visible Emission Limitations)

Visible emissions from this facility, located in an attainment county for particulate matter, shall not exceed the following:

(a) Visible emissions shall not exceed an average of forty percent (40%) opacity in twenty-four (24) consecutive readings.

(b) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.

326 IAC 6-3-2 (Particulate Emission Limitations)

The one (1) 4,000 bushel per hour column grain dryer (ID No. dryer #2) is subject to particulate matter limitations under 326 IAC 6-3-2. Pursuant to this rule, particulate emissions from the grain dryer shall be limited by the following equation:

$E = 55.0P^{0.11} - 40$ (for process weights in excess of 60,000 lbs/hr)

where E = maximum allowable PM emission rate (lbs/hr)

P = process weight (tons/hr): (4,000 bu/hr) * (56 lb/bu) * (1 ton/2,000 lb) = 112.0 tons/hr

$E = 55.0(112.0^{0.11}) - 40 = 52.4$ lbs/hr (229.6 tons/yr)

Potential uncontrolled emissions from the grain dryer (84.2 tons/yr) are less than the allowable emissions (229.6 tons/yr), therefore, the one (1) 4,000 bushel per hour column grain dryer (ID No. dryer #2) will comply with the requirements of 326 IAC 6-3-2.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 189 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.

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

Conclusion

The construction of this one (1) 4,000 bushel per hour column grain dryer (ID No. dryer #2) will be subject to the conditions of the attached proposed **Construction Permit No. CP-017-8604-00017.**

Indiana Department of Environmental Management
Office of Air Management

Addendum to the
Technical Support Document for New Construction and Operation

Source Name:	Archer Daniels Midland Company (ADM)/Countrymark
Source Location:	County Roads 300 South & 275 West, Clymers, Indiana 46947
County:	Cass
Construction Permit No.:	CP-017-8604-00017
SIC Code:	5153
Permit Reviewer:	Luke McHale/EVP

On May 15, 1998, the Office of Air Management (OAM) had a notice published in the Pharos Tribune, Logansport, Indiana, stating that Archer Daniels Midland Company (ADM)/Countrymark had applied for a construction permit to construct and operate a modification of the Logansport Grain Terminal consisting of the addition of one (1) column grain dryer. 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.

Upon further review, the OAM has decided to make the following changes to the TSD and the Construction Permit:

1. The equipment description for the column grain dryer on page 1 of 4 of the TSD, and on page 1 of 5 of the Construction Permit is revised to read as follows (additional text in bold):

   one (1) 20.9 million (MM) British thermal units per hour (Btu/hr), natural gas fired column grain dryer (ID No. dryer #2), processing a maximum of 4,000 bushels per hour**, with a column plate perforation of less than 0.094 inches**.

2. Part (c) of operation condition 11, Emergency Reduction Plans, on page 5 of 5 of the Construction Permit, has been revised to read as follows (deletions in strikeout):

   (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. ~~If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.~~

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

Archer Daniels Midland Company (ADM)/Countrymark
P.O. Box 1470
Decatur, IL 62525

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 Archer Daniels Midland Company (ADM)/Countrymark, County Roads 300 South & 275 West, Clymers, Indiana 46947, has constructed the one (1) 20.9 MMBtu/hr natural gas fired column grain dryer (ID No. dryer #2), processing a maximum of 4,000 bushels per hour, in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on May 21, 1997 and as permitted pursuant to **Construction Permit No. CP-017-8604, Plant ID No. 017-00017** issued on _____.

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: Emission Calculations

Company Name: Archer Daniels Midland Company (ADM)/Countrymark
Address City IN Zip: County Roads 300 South & 275 West, Clymers, Indiana 46947
CP: 017-8604
Plt ID: 017-00017
Reviewer: Luke McHale
Date: May 21, 1997

Modification Potential Emissions - Uncontrolled (tons/year)

	Emissions Generating Activity		
Pollutant	Natural Gas Combustion	Column Grain Dryer	**TOTAL**
PM	1.28	84.18	85.5
PM10	1.28	21.05	22.3
SO2	0.05	0.00	0.1
NOx	12.82	0.00	12.8
VOC	0.25	0.00	0.3
CO	3.20	0.00	3.2

Total emissions based on rated capacity at 8,760 hours/year.

Modification Potential Emissions - Controlled (tons/year)

	Emissions Generating Activity		
Pollutant	Natural Gas Combustion	Column Grain Dryer	**TOTAL**
PM	1.28	84.18	85.5
PM10	1.28	21.05	22.3
SO2	0.05	0.00	0.1
NOx	12.82	0.00	12.8
VOC	0.25	0.00	0.3
CO	3.20	0.00	3.2

Total emissions based on rated capacity at 8,760 hours/year, including control.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
10 < MM BTU/HR <100

Company Name: Archer Daniels Midland Company (ADM)/Countrymark
Address City IN Zip: County Roads 300 South & 275 West, Clymers, Indiana 46947
CP: 017-8604
Plt ID: 017-00017
Reviewer: Luke McHale
Date: May 21, 1997

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
20.9	183.1

Heat Input Capacity includes:
one (1) 20.9 MMBtu/hr natural gas fired grain dryer

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	14.0	14.0	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	1.28	1.28	0.05	12.82	0.25	3.20

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

Appendix A: Emissions Calculations
Column Grain Dryer Emission Calculations

Company Name: Archer Daniels Midland Company (ADM)/Countrymark
Address City IN Zip: County Roads 300 South & 275 West, Clymers, Indiana 46947
CP: 017-8604
Plt ID: 017-00017
Reviewer: Luke McHale
Date: May 21, 1997

Emission Calculations for one (1) 4,000 bu/hr column grain dryer:

State Potential Emissions (uncontrolled):						
Dryer Capacity (bu/hr)	Bushel Weight (lbs/bu)	PM Emission Factor (lbs PM/ton) * DR	PM10 Emission Factor (lbs PM10/ton) * DR	Dustiness Ratio (1) (DR) (for mixed grains)	Potential Uncontrolled PM Emissions (tons/yr)	Potential Uncontrolled PM10 Emissions (tons/yr)
4,000	56	0.088	0.022	1.95	84.18	21.05
Federal Potential Emissions (controlled):						
Potential Uncontrolled PM Emissions (tons/yr)	Potential Uncontrolled PM10 Emissions (tons/yr)	Control Device Type:	Capture System Capture Efficiency (%)	Control Device Control Efficiency (%)	Potential Controlled PM Emissions (tons/yr)	Potential Controlled PM10 Emissions (tons/yr)
84.18	21.05	n/a	n/a	n/a	84.18	21.05

Methodology:

Emission factors are from U.S.EPA's AP-42, Interim Section 9.9.1, 11/95, Table 9.9.1-2 (Interim Uncontrolled Particulate Emission Factors for Grain Elevators)

Potential Uncontrolled PM/PM10 Emissions (tons/yr) = Dryer Capacity (bu/hr) * Bushel Weight (lbs/bu) * (1 ton/2,000 lbs) * PM/PM10 Emission Factor (lbs PM/ton) * Dustiness Ratio (DR) * (8,760 hrs/yr) * (1 ton/2,000 lbs)

Potential Controlled PM/PM10 Emissions (tons/yr) = Potential Uncontrolled PM/PM10 Emissions (tons/yr) * [1 - (Capture Efficiency * Control Efficiency)]

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Appendix A: Emission Calculations
Existing Source Emissions - Inland Terminal Grain Elevator

Company Name: Archer Daniels Midland Company (ADM)/Countrymark
Address City IN Zip: County Roads 300 South & 275 West, Clymers, Indiana 46947
CP: 017-8604
Plt ID: 017-00017
Reviewer: Luke McHale
Date: May 21, 1997

State Potential Emissions (uncontrolled):						
Operation	Grain Receiving (truck/rail)	Grain Drying (column)	Internal Operations	Bin Loading	Grain Shipping (truck/rail)	**TOTAL**
Operation Capacity (bu/hr)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	
Grain Weight (lb/bu)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	
Maximum Annual Throughput (ton/yr)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	
PM Emission Factor (lb/ton)	0.060	0.088	0.33	0.020	0.011	
PM10 Emission Factor (lb/ton)	0.015	0.022	0.08	0.005	0.003	
Dustiness Ratio (for mixed grains):	1.95	1.95	1.95	1.95	1.95	
Potential PM Emissions (ton/yr)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	**3,188.80**
Potential PM10 Emissions (ton/yr)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	**781.06**
Federal Potential Emissions (controlled):						
Operation	Grain Receiving	Grain Drying	Internal Operations (tunnel belt)	Bin Loading	Grain Shipping	**TOTAL**
Potential PM Emissions (tons/yr):	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	
Potential PM10 Emissions (tons/yr):	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	
Control Equipment (1):	enclosure & baghouse	mineral oil	enclosure, baghouse & mineral oil	mineral oil	enclosure & mineral oil	
Control Efficiency	99.0%	70.0%	99.0%	70.0%	90.0%	
Controlled PM Emissions (tons/yr)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	**129.43**
Controlled PM10 Emissions (tons/yr)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	(CONFIDENTIAL)	**32.36**

Note:

(1) Mineral oil is added to the grain after is it received, thus mineral oil control applies to all operations except grain receiving.

Methodology:

Maximum Annual Throughput (ton/yr) = Operation Capacity (bu/hr) * Grain Weight (lb/bu) * (8,760 hr/yr) * (1 ton/2,000 lbs)

Emission factors are from U.S.EPA's AP-42, Interim Section 9.9.1, 11/95, Table 9.9.1-2 (Interim Uncontrolled Particulate Emission Factors for Grain Elevators).

Potential PM/PM10 Emissions (ton/yr) = Hourly Throughput (ton/hr) * PM/PM10 Emission Factor (lb/ton) * Dustiness Ratio * (8,760 hr/yr) * (1 ton/2,000 lb)

Controlled PM/PM10 Emissions (ton/yr) = Potential Uncontrolled PM/PM10 Emissions (ton/yr) * [1 - (Control Efficiency)]

Appendix A: Emission Calculations
Existing Source Emissions - Natural Gas Combustion
10 < MM BTU/HR <100

Company Name: Archer Daniels Midland Company (ADM)/Countrymark
Address City IN Zip: County Roads 300 South & 275 West, Clymers, Indiana 46947
CP: 017-8604
Plt ID: 017-00017
Reviewer: Luke McHale
Date: May 21, 1997

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
20.9	183.1

Heat Input Capacity includes:
one existing (1) 20.9 MMBtu/hr natural gas fired grain dryer

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	14.0	14.0	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	1.28	1.28	0.05	12.82	0.25	3.20

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