

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **122012-002**

Project Number: 2012-08-003
Installation Number: 205-0002

Parent Company: Archer Daniels Midland

Parent Company Address: 4666 Faries Parkway, Decatur, IL 62526

Installation Name: Archer Daniels Midland (ADM)-Shelbina

Installation Address: 308 E Chestnut Street, Shelbina, MO 63468

Location Information: Shelby County, S32, T57N, R10W

Application for Authority to Construct was made for:
Replacement and construction of two conveyors and associated equipment. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

DEC - 4 2012

EFFECTIVE DATE

**DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES**

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Archer Daniels Midland (ADM)-Shelbina
Shelby County, S32, T57N, R10W

1. PM Emission Limitation
 - A. Archer Daniels Midland (ADM)-Shelbina shall emit less than 25.0 tons of PM in any consecutive 12-month period from the project as defined in Table 1.
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A.
2. Haul Roads Emission Controls

Archer Daniels Midland (ADM)-Shelbina shall control dust from all haul roads at this site in accordance with at least one of the following options when the plant is operating.

 - A. Pavement
 - 1) Archer Daniels Midland (ADM)-Shelbina shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions while the plant is operating.
 - 2) Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
 - 3) Archer Daniels Midland (ADM)-Shelbina shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
 - B. Application of Chemical Dust Suppressants
 - 1) Archer Daniels Midland (ADM)-Shelbina shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- 2) The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
 - 3) Archer Daniels Midland (ADM)-Shelbina shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas.
- C. Application of Water-Documented Daily
- 1) The Archer Daniels Midland (ADM)-Shelbina shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
 - 2) Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
 - 3) Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
 - 4) Archer Daniels Midland (ADM)-Shelbina shall record the date, volume of water application and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
3. Record Keeping and Reporting Requirements
- A. Archer Daniels Midland (ADM)-Shelbina shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.
 - B. Archer Daniels Midland (ADM)-Shelbina shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2012-08-003
Installation ID Number: 205-0002
Permit Number:

Archer Daniels Midland (ADM)-Shelbina
308 E Chestnut Street
Shelbina, MO 63468

Complete: July 31, 2012

Parent Company:
Archer Daniels Midland
4666 Faries Parkway
Decatur, IL 62526

Shelby County, S32, T57N, R10W

REVIEW SUMMARY

- Archer Daniels Midland (ADM)-Shelbina has applied for authority to construct and replace two conveyors and associated equipment.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment. Dust suppressants are applied to control haul road emissions.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM are conditioned below the de minimis level. Potential emissions of PM₁₀ and PM_{2.5} are indirectly conditioned below respective de minimis levels.
- This installation is located in Shelby County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential PM₁₀ emissions of the application are indirectly conditioned below the de minimis level, and there are no modeling standards for PM.

- Emissions testing are not required for the equipment.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Archer Daniel Midland (ADM)-Shelbina is an agricultural business located in Shelby County. The original three bins were constructed in 1949 with additional bins and associated equipment being constructed in 1950 and 1972. No new emission sources have been added since 1972. Thus, this facility is considered to be a grand-fathered facility from construction permits since it was constructed prior to May 13, 1982.

No permits have been issued to Archer Daniels Midland (ADM)-Shelbina from the Air Pollution Control Program. An Operating Permit Applicability Determination Request was made in 1994 and no permit was required.

PROJECT DESCRIPTION

ADM-Shelbina has requested confidentiality for process rates and storage capacities. This is the public version of the permit. A confidential version is available under Project Number 2012-08-004. ADM-Shelbina proposes to replace one █ bushel per hour conveyor with a █ bushel per hour conveyor. Also, three █ bushels per hour legs will be replaced with three █ bushels per hour legs. The conveyor will not operate at its maximum potential hourly throughput due to the lower capacity of the legs running off of it. Therefore the MHDR of this project will be █ bushels per hour or █ tons per hour. The █ bushels per hour MHDR was converted to █ tons per hour by dividing by the weight of 60 pounds per bushel. The six existing █ loadout spouts will be replaced with six █ loadout spouts as well as one new distributor. The upgrades are being made to increase capacity. There is no dryer at this facility. There are no emission controls.

The following Table 1 lists the new equipment and the debottlenecked associated equipment that will reflect the new MHDR of █ tons per hour at the installation.

Table 1: ADM-Shelbina Elevator New Conveyors/Legs and Associated Equipment

Emission Points	Project Equipment
EP-01	Grain Receiving – Straight Truck (debottlenecked)
EP-02	Grain Handling (new)
EP-03	Grain Storage (debottlenecked)
EP-04	Grain Loadout—Straight Truck (debottlenecked)
EP-05	Haul Road--Receiving
EP-06	Haul Road--Shipping

Currently the ADM-Shelbina facility has a permanent storage capacity of █ bushels. Therefore, this facility is not subject to New Source Performance Standards (NSPS),

Subpart DD for Grain Elevators since their storage capacity is less than 2.5 million bushels.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 *Grain Elevators and Processes*, May 2003. Haul road emissions were calculated using AP-42, Section 13.2.2, *Unpaved Roads*, November 2006.

Grain will be received by straight and hopper trucks. The grain receiving (EP-01) emissions were calculated using the most conservative scenario of 100 percent receiving by straight trucks because grain received from straight trucks have a higher emission rate. This method avoids a special condition and record keeping for amount that was received by straight/hopper trucks.

Grain will be shipped by a combination of hopper and straight trucks. The shipping haul roads (EP-06) emissions were calculated using the most conservative scenario of 100 percent shipping by straight trucks because straight trucks typically haul less than hopper trucks requiring more trips, thus greater VMTs. This method avoids a special condition and record keeping for amount that was shipped by hopper/straight trucks.

The following Table 2 provides an emissions summary for this project. Emissions of the existing equipment affected by the new conveyors and legs were conservatively calculated at their potentials. Actual emissions were not available. Potential emissions of the application represent the potential of the new and modified/debottlenecked equipment, assuming continuous operation (8,760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	364.57	<25.0
PM ₁₀	15.0	N/D	N/D	131.49	9.02
PM _{2.5}	10.0	N/D	N/D	21.99	1.51
SO _x	40.0	N/D	N/D	N/A	N/A
NO _x	40.0	N/D	N/D	N/A	N/A
VOC	40.0	N/D	N/D	N/A	N/A
CO	100.0	N/D	N/D	N/A	N/A
HAPs	10.0/25.0	N/D	N/D	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

RULE APPLICABILITY

- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM are conditioned below the de minimis level. Potential emissions of PM₁₀ and PM_{2.5} are indirectly conditioned below respective de minimis levels.

APPLICABLE REQUIREMENTS

Archer Daniels Midland (ADM)-Shelbina shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Kathy Kolb
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated July 25, 2012, received July 31, 2012, designating Archer Daniels Midland as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheets
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	
CFR	Code of Federal Regulations	National Emissions Standards for Hazardous Air Pollutants
CO	carbon monoxide	NO_x	nitrogen oxides
CO₂	carbon dioxide	NSPS	New Source Performance Standards
CO_{2e}	carbon dioxide equivalent	NSR	New Source Review
COMS	Continuous Opacity Monitoring System	PM	particulate matter
CSR	Code of State Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
dscf	dry standard cubic feet	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
EQ	Emission Inventory Questionnaire	ppm	parts per million
EP	Emission Point	PSD	Prevention of Significant Deterioration
EPA	Environmental Protection Agency	PTE	potential to emit
EU	Emission Unit	RACT	Reasonable Available Control Technology
fps	feet per second	RAL	Risk Assessment Level
ft	feet	SCC	Source Classification Code
GACT	Generally Available Control Technology	scfm	standard cubic feet per minute
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tpy	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Ms. Karena Musgrave
Environmental Specialist
Archer Daniels Midland (ADM)-Shelbina
4666 Faries Parkway
Decatur, IL 62526

RE: New Source Review Permit - Project Number: 2012-08-003

Dear Ms. Musgrave:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Kathy Kolb, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kk1

Enclosures

c: Northeast Regional Office
PAMS File: 2012-08-003

Permit Number: