



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: 082009-004 Project Number: 2009-07-003

Parent Company: Chula Farmers' Cooperative

Parent Company Address: 1 North Manning, Chula, MO 64635

Installation Name: Chula Farmers' Cooperative

Installation Address: 1 North Manning, Chula, MO 64635

Location Information: Livingston County, S22, T56N, R23W

Application for Authority to Construct was made for:

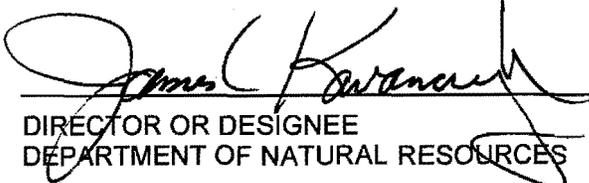
One 7,500 bushel per hour receiving pit, one 9,500 bushel per hour leg, and two 105,000 bushel bins. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

AUG 13 2009

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 departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. 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 this (these) air contaminant source(s).

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 source(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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Permit No.	
Project No.	2009-07-003

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."

Chula Farmers' Cooperative
Livingston County, S22, T56N, R23W

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in the previously issued construction permits (Permit Numbers 0497-028, 082001-011, and 112003-009) from the Air Pollution Control Program.
2. **Emission Limitation**
 - A. Chula Farmers' Cooperative shall emit less than 15.0 tons of particulate matter less than ten (10) microns in diameter (PM₁₀) in any consecutive 12 month period from the entire installation, as defined in Table 2.
 - B. Chula Farmers' Cooperative shall maintain an accurate record of PM₁₀ emitted into the atmosphere from the entire installation. Attachment A or an equivalent form, approved by the Air Pollution Control Program, shall be used for this purpose. Chula Farmers' Cooperative shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
 - C. Chula Farmers' Cooperative shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 2.B. indicate that the source exceeds the limitation of Special Condition Number 2.A.
3. **Control Device - Oil Application System**
Chula Farmers' Cooperative shall apply food grade oil to all grain received at the installation using an oil application system. The oil shall be applied at a location prior to the occurrence of emissions from EP-03 Internal handling, EP-04 Storage bin vents, and EP-05 Shipping – semi, in order to achieve a control efficiency of 70% at these emission points. The oil application system shall be operated and maintained in accordance with the manufacturer's specifications.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2009-07-003
Installation ID Number: 117-0031
Permit Number:

Chula Farmers' Cooperative
1 North Manning
Chula, MO 64635

Complete: July 6, 2009

Parent Company:
Chula Farmers' Cooperative
1 North Manning
Chula, MO 64635

Livingston County, S22, T56N, R23W

REVIEW SUMMARY

- Chula Farmers' Cooperative has applied for authority to construct one 7,500 bushel per hour receiving pit, one 9,500 bushel per hour leg, and two 105,000 bushel bins.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment. The permanent storage capacity of the installation is 304,400 bushels, which is less than the applicability level of 2.5 million bushels defined in NSPS Subpart DD-Standards of Performance for Grain Elevators. The installation does not store or handle super-triple phosphate, therefore NSPS Subpart X-Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities, does not apply. The installation does not manufacture fertilizer, therefore NSPS Subparts T, U, V, and W do not apply.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Oil is being used to control the PM₁₀ emissions from the internal handling, storage, and shipping equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are at minor source levels, but voluntarily limited to de minimis levels. Potential emissions of PM are proportionately reduced to minor source levels.

- This installation is located in Livingston County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was not performed since potential emissions of PM₁₀ are limited to de minimis levels. An ambient air quality standard does not exist for PM, therefore modeling is not required for PM.
- Emission testing is not required for the equipment.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Chula Farmers' Cooperative is an existing grain elevator and fertilizer blending facility, herein referred to as "the coop". Grain is received via truck, then stored in bins, and finally shipped via truck. The coop does not dry grain. The permanent storage capacity, as of the date of this review, is 304,400 bushels. Diammonium phosphate, urea, and potash fertilizers are received, mixed, and sold to local farmers. Previous construction permits have been issued to the coop, and are listed in Table 1. No operating permit has been issued. The installation is a synthetic de minimis source.

Table 1: Construction Permits Issued

Permit Number	Description
0497-028	Four grain bins with a total capacity of 94,400 bushels and a portable auger
082001-011	One grain bin and leg
112003-009	One grain receiving pit

Three notices of violation have been issued to the coop, each for failure to obtain a construction permit before installing equipment. Table 2 lists the emission sources at the installation as of the date of this review. The coop has dismantled one grain receiving pit, several legs, and bins. Therefore, the emission points have changed from previous permits. For grain receiving, the coop cannot control the type of truck delivering grain, whether it is hopper dump semi or straight truck. The sum of receiving maximum hourly design rates (MHDRs) is limited by the type of truck, unloading conditions, and receiving pit volume. There are three grain receiving pits, maximally rated at 2,500, 7,250, and 7,500 bushel per hour, equivalent to a total of 517.5 tons per hour using 60 pounds per bushel. The legs are rated at 3,000, 7,000, and 9,500 bushels per hour, respectively, equivalent to a total of 585 tons per hour. Since the installation can receive less grain than the legs can transfer, the receiving design rate is a bottleneck. All haul roads are gravel. The greatest potential to emit is calculated at all grain received by straight truck. The coop also operates grandfathered fertilizer receiving, blending, and shipping equipment.

Table 2: Installation Emission Source List

Emission Point	Description	Maximum Hourly Design Rate (MHDR)	MHDR Units
EP-01	Combined receiving	517.5	Tons
EP-02	Internal handling	585 (necked to 517.5)	Tons
EP-03	Storage bin vents	585 (necked to 517.5)	Tons
EP-04	Shipping - semi	120	Tons
EP-05	Haul road #1 – receiving straight truck	4.36	Vehicle Miles Traveled
EP-06	Haul road #2 – receiving hopper semi	1.31	Vehicle Miles Traveled
EP-07	Haul road #3 – shipping semi	0.30	Vehicle Miles Traveled
EP-08	Fertilizer receiving	19	Tons
EP-09	Fertilizer shipping	19	Tons
EP-10	Fertilizer blending	19	Tons
EP-11	Fertilizer leg	19	Tons

PROJECT DESCRIPTION

The coop is installing one 7,500 bushel per hour receiving pit, one 9,500 bushel per hour leg, and two 105,000 bushel bins. Grain can be received at any percentage combination of hopper dump semi truck and straight trucks. The receiving pit design rate is limited by the type of truck, unloading conditions, and receiving pit volume, estimated at 7,500 bushels per hour or 225 tons per hour. The new leg has a design rate of 9,500 bushels or 285 tons per hour. The receiving pit is the bottleneck, therefore internal handling and bin vent emissions are limited by the receiving pit’s design rate. The receiving pit area is not walled, roofed, or vented to a baghouse. Mineral or soybean oil will be applied to all grain before entering the leg. All bins are vented to the atmosphere. The floor load-out system design rate is 4,000 bushels or 120 tons per hour.

EMISSIONS/CONTROLS EVALUATION

The grain emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, 9.9.1 Grain Elevators and Processes, May 2003. Emissions from fertilizer steps were cited from permit 112003-009, but not included in the potential emissions of the project. Instead, they were included in the potential emissions of the installation. Emissions from the existing grain equipment were also included in the potential emissions of the installation. Potential emissions of the project represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) The following table provides an emissions summary.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2002 EIQ)	Potential Emissions of the Project	Potential Emissions of the Installation	New Installation Conditioned Potential
PM	25.0	N/D	N/D	262.34	573.68	N/A
PM ₁₀	15.0	<15.0	1.25	87.70	199.00	<15.0
SO _x	40.0	N/A	N/D	N/A	N/A	N/A
NO _x	40.0	N/A	0.03	N/A	N/A	N/A
VOC	40.0	N/A	N/D	N/A	N/A	N/A
CO	100.0	N/A	0.03	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/D	N/A	N/A	N/A

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

As mentioned, the greatest potential to emit was calculated at all grain received by straight truck, 87.70 tons of PM₁₀ per year for the project and 192.34 tons of PM₁₀ per year for the grain equipment. The potential PM₁₀ emissions from the fertilizer equipment as 6.66 tons per year, summed with all grain equipment, yields 199.00 tons per year, for the installation. Annual particulate matter (PM) emissions are at 262.34 tons and 573.68 tons, respectively. The added affect of PM emissions from fertilizer equipment was not determined. Installation PM emissions are proportionately reduced to less than 44.74 tons per year by limiting PM₁₀ emissions to less than 15.0 tons per year and assuming a linear relationship. Emissions from the installation, not the project, are being limited. Therefore, with installation PM₁₀ emissions at less than 15.0 tons per year and installation PM emissions at less than 44.74 tons per year, this review is subject to Section (6) regulations.

More realistically, approximately sixty percent of grain will be received by hopper dump semi truck, while only forty percent by straight truck. Separate emission factors were developed for hopper dump semi and straight truck grain, with each emission factor calculated from one hundred percent of grain received either way. No control efficiency was used for grain receiving. Oil is applied to all grain before entering the legs, therefore a capture efficiency of one hundred percent and control efficiency of seventy percent was used at subsequent emission processes. Grain loaded into bins creates emissions that transfer to the atmosphere through vents, subject to the storage bin vent emission factor. Grain is shipped from the coop via semi truck, and subject to that respective emission factor.

Haul road emission factors for received grain were calculated in units of pounds of PM₁₀ per truck, specific to type of truck. The tons of grain that either type of truck can haul in one load per hour were entered into the spreadsheet as the maximum hourly amount hauled, 9 and 30 tons per load in one hour for straight and hopper dump semi, respectively. This yielded the emission factor in pounds of PM₁₀ per truck. The greatest haul road potential to emit is from all grain received by straight truck. For the PM₁₀ tracking record it would be simpler to treat all trucks as straight trucks and use the straight truck emission factor, however this would overestimate emissions. Tracking emissions based upon separate types of trucks more closely represents actual

conditions and allows for future flexibility as grain farmers move towards semi and away from straight trucks. The haul road emission factor for shipped out grain was calculated based upon the MHDR of the bin unloading system.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are at minor source levels, but voluntarily limited to de minimis levels. PM emissions are at major source levels, but proportionately reduced to minor source levels.

APPLICABLE REQUIREMENTS

Chula Farmers' Cooperative 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. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *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 10-3.090
- *Operating Permits*, 10 CSR 10-6.065

SPECIFIC REQUIREMENTS

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

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was not performed since potential emissions of PM₁₀ from the installation are limited to de minimis levels. PM emissions are at minor source levels, but an ambient air quality standard does not exist for PM.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

David Little
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 25, 2009, received June 26, 2009, designating Chula Farmers' Cooperative as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Northeast Regional Office Site Survey, dated July 6, 2009.

Attachment A – PM₁₀ Compliance Worksheet

Chula Farmers' Cooperative
 Livingston County, S22, T56N, R23W
 Project Number: 2009-07-003
 Installation ID Number: 117-0031
 Permit Number: _____

This sheet covers the period from _____ to _____.
 (month, year) (month, year)

Date (month/year)	<i>example</i>	<i>example</i>						
Grain Received - Hopper Semi (tons)	36,000	50,000						
Emission Factor – Hopper Semi	0.01989	0.01989	0.01989	0.01989	0.01989	0.01989	0.01989	0.01989
¹Emissions - Grain by Hopper Semi	716.04	994.50						
Number of Semis Unloading	1,200	1,650						
Emission Factor – Semi Haul Road	0.15083	0.15083	0.15083	0.15083	0.15083	0.15083	0.15083	0.15083
²Emissions - Semi Haul Road	180.97	248.87						
Grain Received - Straight Truck (tons)	10,800	10,000						
Emission Factor – Straight Truck	0.07109	0.07109	0.07109	0.07109	0.07109	0.07109	0.07109	0.07109
¹Emissions - Grain by Straight Truck	767.77	710.90						
Number of Straight Trucks Unloading	1,200	1,100						
Emission Factor – Straight Truck	0.09524	0.09524	0.09524	0.09524	0.09524	0.09524	0.09524	0.09524
²Emissions - Straight Truck Haul Road	114.29	104.76						
Grain Shipped (tons)	20,000	30,000						
Emission Factor - Shipping	0.01373	0.01373	0.01373	0.01373	0.01373	0.01373	0.01373	0.01373
¹Emissions - Shipping	274.60	411.90						
Fertilizer Processed (tons)	1,000	0						
Emission Factor – Fertilizer	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
³Emissions - Fertilizer	80.00	0						
⁴Monthly Installation Emissions	2,133.67	2,470.93						
⁵Monthly Installation Emissions (tons)	1.07	1.24						
⁶12-month PM₁₀ Emissions (tons)	1.07	2.31						

Note 1: Multiply Grain Received - Hopper Semi, Grain Received - Straight Truck, and Grain Shipped by their respective emission factors. Record the values in pounds. Emission factor units are pounds of PM₁₀ per ton of grain received.

Note 2: Multiply the Number of Semis Unloading and Straight Trucks Unloading by their respective emission factors. Record the values in pounds. Emission factor units are pounds of PM₁₀ per semi or truck.

Note 3: Multiply Fertilizer Processed this month by the appropriate emission factor. Record the value in pounds. Emission factor units are pounds of PM₁₀ per ton of fertilizer.

Note 4: Sum the six Monthly Emissions cells. Record the value in pounds.

Note 5: Divide the Monthly Installation Emissions in pounds by 2,000 to yield Monthly Installation Emissions in tons.

Note 6: Sum the previous 12 Monthly Installation Emissions in tons. A total of less than 15.0 tons in any consecutive 12 month period indicates compliance.

Copy this compliance worksheet as needed.

Mr. Dan Murphy
Manager
Chula Farmers' Cooperative
1 North Manning
Chula, MO 64635

RE: New Source Review Permit - Project Number: 2009-07-003

Dear Mr. Murphy:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 and your new source review permit application 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 David Little, at the Department's 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

Kendall B. Hale
New Source Review Unit Chief

KBH:dll

Enclosures

c: Northeast Regional Office
PAMS File: 2009-07-003

Permit Number: