

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:

012012-008

Project Number: 2011-09-040

Installation Number: 159-0026

Parent Company: MFA Incorporated

Parent Company Address: 201 Ray Young Drive, Columbia, MO 65201-3599

Installation Name: MFA Agri Service - Sedalia

Installation Address: 2200 Clinton Road, Sedalia, MO 65301

Location Information: Pettis County, S9, T45N, R21W

Application for Authority to Construct was made for:

Seed handling and treatment. 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.

JAN 17 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."

MFA Agri Service - Sedalia
Pettis County, S9, T45N, R21W

1. Emission Limitation
 - A. MFA Agri Service - Sedalia shall emit less than 40.0 tons of volatile organic compounds (VOCs) in any consecutive 12-month period from the treater (EP-S5).
 - 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 Condition 1.A.
2. Emission Limitation
 - A. MFA Agri Service - Sedalia shall emit less than 15.0 tons of particulate matter less than ten microns in diameter (PM₁₀) in any consecutive 12 - month period from the entire installation (see Table 1).
 - B. Attachment B or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.A.
3. Operational Requirement

MFA Agri Service - Sedalia shall keep the fungicides, pesticides, inoculants, liquid fertilizers, and herbicides in sealed containers whenever the materials are not in use. MFA Agri Service - Sedalia shall provide and maintain suitable, easily read, permanent markings on all of the above containers.
4. Record Keeping and Reporting Requirements
 - A. MFA Agri Service - Sedalia 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 Material Safety Data Sheets (MSDS) for all materials used.

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SPECIAL CONDITIONS:

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

- B. MFA Agri Service - Sedalia 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 shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2011-09-040
Installation ID Number: 159-0026
Permit Number:

MFA Agri Service - Sedalia
2200 Clinton Road
Sedalia, MO 65301

Complete: September 15, 2011

Parent Company:
MFA Incorporated
201 Ray Young Drive
Columbia, MO 65201-3599

Pettis County, S9, T45N, R21W

REVIEW SUMMARY

- MFA Agri Service - Sedalia has applied for authority to construct seed handling and treatment equipment.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAP of concern is ethylene glycol (chemical abstract service 107-21-1) from fungicide Dividend Extreme.
- None of the New Source Performance Standards (NSPS) apply to the installation. NSPS Subpart DD, *Standards of Performance for Grain Elevators* and NSPS Subpart X, *Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities* do not apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Building enclosure for fertilizer storage bays (EP-10), fertilizer mixing (EP-14), seed weigh hopper (EP-S4), seed conveying (EP-S3), and seed treatment (EP-S5) is being used to control the particulate matter (PM), particulate matter less than ten microns (PM₁₀), and particulate matter less than 2.5 microns (PM_{2.5}) emissions.
- 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 and volatile organic compounds (VOCs) are conditioned below the respective de minimis level. Potential emissions of PM remain at minor source levels. Potential emissions of ethylene glycol are indirectly conditioned below the major source threshold.
- This installation is located in Pettis 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 emissions of PM₁₀ for the application are limited below de minimis level. Ambient air quality modeling was not performed for PM since there is not a standard.
- Emissions 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

MFA Incorporated operates a combination grain elevator, animal feed mill, fertilizer and agriculture chemical distribution facility at 2200 Clinton Road in Sedalia, Missouri. The installation is referred to as MFA in this permit. The existing licensed grain storage capacity according to the Missouri Department of Agriculture licensed grain dealer/warehouse database is 503,000 bushels. Once the seed treatment equipment being added under this permit is installed, the storage capacity will be 518,000 bushels. Therefore the installation is not defined as a grain terminal elevator under NSPS Subpart DD. The installation does not include a wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant. Therefore the installation is not defined as a grain storage elevator under NSPS Subpart DD. The installation stores fertilizer, but does not store fresh granular triple superphosphate. Therefore, NSPS Subpart X does not apply. No permits have been issued to MFA from the Air Pollution Control Program. It was determined under project 2003-08-089 that no operating permit was required at that time. The installation is defined in Table 1.

Table 1: Installation Emission Units

Emission Unit	Description	¹ Maximum Hourly Design Rate – Annual Basis (tons per hour)
Grain		
1	Hopper bottom grain receiving	97.5
1a	Straight truck grain receiving	97.5
2	Handling	195
13	Bin vents	195
3	Grain load out to trucks	195
12	Unpaved haul road	195
Feed		
15	Grain receiving	12
16	Handling	12
13a	Bin vents	12
7	Hammermill	12
17	Feed loadout to trucks	12
12a	Unpaved haul road	12
Fertilizer		
9	Fertilizer receiving	45

10	Storage bays	45
14	Mixing	45
11	Shipping	45
12b	Unpaved haul road	45
Seed		
S1	Hopper bottom seed receiving	36
S2	Bin filling	36
S4	Weigh hopper	36
S3	Handling, conveying	36
S5	Treatment	36
S6	Shipping	36
12c	Unpaved haul road	36

¹ Design rate for grain and seed assumes bulk density of 60 pounds per bushel.

PROJECT DESCRIPTION

MFA is installing soybean and wheat seed handling and treating equipment. Seed will be delivered, stored, weighed, treated, and shipped. Treatment options submitted with the application include fungicides and insecticides. On an annual basis the seed equipment is bottlenecked to 36 tons per hour for each emission unit by the seed treater (EP-S5).

Clean seed will be delivered via semi truck and trailer and unloaded to one of five 3,000 bushel hopper bottom bins using a new conveyor system. The bins do not have vents, but have tops that are open during filling. Stored seed will be transferred via conveyor to a weigh hopper, treatment mixer, and finally to load-out. MFA will have the capability to bypass the bins and load seed directly into the weigh hopper. Also, they will have the capability to bypass the treatment step and load-out seed without being treated. However, the greatest potential to emit would include all steps, and without placing limits on the amount of seed received or treated, project emissions include all seed processed through all steps.

Seed can be coated with Apron Maxx RFC A12640C, Dividend Extreme A12532C, and Cruiser Maxx A14379B. Only one treatment will be used per batch of seed. The greatest potential VOC and HAP emissions are from Dividend Extreme. All treatments are liquids, but conservatively are not considered a dust suppressant for particulate matter. The treatment building is considered an enclosure for particulate matter per the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Table B.2.3.

MFA has requested an installation wide de minimis PM₁₀ limit. Potential emissions from the grain elevator, feed mill, and fertilizer emission units were calculated and included in the project. The grain elevator and feed mill have no control devices.

EMISSIONS/CONTROLS EVALUATION

Seed will not be cleaned at the installation and therefore must be received in a cleaned state compared to grain received at an elevator. Seed receiving emissions were calculated using emission factors for receiving at an animal feed mill cited from AP-42, Section 9.9.1, *Grain Elevators and Processes*, May 2003. Emissions from the storage

bins and weigh hopper filling were calculated using the storage bin vent emission factors for a grain elevator. Seed treatment particulate emissions were calculated using the internal handling emission factor. Seed treatment VOC emissions were calculated using application rates and VOC weight contents from the manufacturer and mass balance, assuming all available VOC being emitted. Seed treatment HAP emissions were calculated using material safety data sheets (MSDS), application rates and mass balance, assuming all available HAP being emitted. Usage of Dividend Extreme results in the greatest potential VOC emissions and the only potential HAP emissions. The treatment chemicals are the only source of VOC emissions from the installation. Limiting treatment VOC emissions therefore limits the entire installation's VOC emissions.

Grain elevator emissions were calculated using AP-42, Section 9.9.1 *Grain Elevators and Processes*, May 2003. Grain receiving at the elevator was assumed to occur through a 50/50 split of straight trucks and hopper trucks. This is a conservative assumption as the emission factor for straight truck receiving is higher than the emission factor for hopper bottom receiving and the trend in the industry is moving towards more hopper bottom trucks compared to straight trucks. Grain will be conveyed through a traditional elevator design with a headhouse.

Feed mill emissions were also calculated using AP-42, Section 9.9.1 *Grain Elevators and Processes*, May 2003. Where available, emission factors representing animal feed mills were used instead of emission factors representing grain elevators. The hammermill is not controlled by a cyclone or baghouse, so the AP-42 controlled emission factor was changed to an uncontrolled emission factor assuming a PM and PM₁₀ control efficiency of 85 percent for a medium efficiency cyclone. The PM_{2.5} emission factor was estimated as 25 percent of the PM₁₀ emission factor. The feed mill does not include a boiler or pellet cooler.

Existing fertilizer processes were evaluated for PM, PM₁₀, and PM_{2.5} emissions. PM_{2.5} emission factors do not exist for fertilizer handling, therefore the PM_{2.5} emission factor (0.005 pounds per ton of fertilizer) was estimated as being 25 percent of the PM₁₀ emission factor (0.02 pounds per ton of fertilizer, source classification code 30102709).

Haul road emissions were calculated using AP-42, Section 13.2.2, *Unpaved Roads*, November 2006. Treated seed haul road emissions were calculated for the greatest potential to emit. Treated seed will be packaged in tender boxes, one ton bulk bags, or fifty pound bags that will be purchased by farmers. The greatest potential to emit was calculated assuming smaller capacity vehicles and higher numbers (pickup trucks and trailers) instead of larger capacity vehicles in fewer numbers (semi trucks and trailers). This method allows flexibility as it doesn't restrict the size or type of shipping. Grain elevator haul road emissions were calculated using the 50/50 truck type split assuming hopper truck volume of 900 bushels and straight truck volume of 550 bushels. Feed mill haul road emissions were calculated assuming feed/grain receiving in 900 bushel hopper trucks and feed shipping in 1,400 cubic feet bulk feed trailers. Fertilizer haul road emissions were calculated assuming delivery in 900 bushel hopper bottom trucks and shipment in pull type spreaders holding 200 cubic feet of fertilizer.

Potential emissions of the application represent the potential of the seed equipment and processes, assuming continuous operation (8,760 hours per year). The installation has not submitted an emissions inventory questionnaire since 2005. The new installation conditioned potential represents the emissions from the entire installation at the time of this permit's issuance, but scaled to account for the voluntary PM₁₀ and VOC limits. The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2005 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	62.03	41.31
PM ₁₀	15.0	N/D	1.85	22.13	< 15.0
PM _{2.5}	10.0	N/D	0.22	3.39	2.51
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	97.48	< 40.0
CO	100.0	N/D	N/D	N/A	N/A
Combined HAPs	25.0	N/D	N/D	19.57	8.03
Ethylene Glycol	10.0	N/D	N/A	19.57	8.03

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

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 and VOC are conditioned below the respective de minimis level. Potential emissions of PM remain at minor source levels. Potential emissions of ethylene glycol are indirectly conditioned below the major source threshold.

APPLICABLE REQUIREMENTS

MFA Agri Service - Sedalia 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
- *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 (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 September 14, 2011, received September 15, 2011, designating MFA Incorporated as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated September 26, 2011.

Attachment B – Installation Wide PM₁₀ Compliance Worksheet

MFA Agri Service - Sedalia
 Pettis County, S9, T45N, R21W
 Project Number: 2011-09-040
 Installation ID Number: 159-0026
 Permit Number: _____

This sheet covers the period from _____ to _____. (Copy this sheet as needed.)
(month, year) (month, year)

	(a)	(b)	(c)
Step Description	Monthly Throughput (tons)	Composite Emission Factor (lb/ton)	Monthly PM ₁₀ Emissions (lbs)
Grain Received		0.1318	
Feed Shipped		0.3426	
Dry Fertilizer Received		0.1008	
Seed Received		0.1404	
(d) Total Monthly PM ₁₀ Emissions (lbs)			
(e) Total Monthly PM ₁₀ Emissions (tons)			
(f) 12-Month PM ₁₀ Emissions (h) from Previous Month's Attachment A (tons)			
(g) Total Monthly PM ₁₀ Emissions (e) from Previous Year's Attachment A (tons)			
(h) Current 12-Month PM ₁₀ Emissions (tons) (h) = [(e) + (f) – (g)]			

- (a) Record this month's throughput.
- (c) Multiply the Monthly Throughput (a) by the respective Composite Emission Factor (b).
- (d) Sum each individual Monthly PM₁₀ Emissions.
- (e) Divide the Total Monthly PM₁₀ Emissions (d) by 2,000.
- (f) Record the 12-Month PM₁₀ Emissions (h) from the Previous Month's Attachment B.
- (g) Record the Total Monthly PM₁₀ Emissions (e) from the Previous Year's Attachment B.
- (h) Calculate the Current 12-Month PM₁₀ Emissions. A total less than 15.0 tons indicates compliance.

Mr. Alan Mahoney
Safety, Environmental & Regulatory Manager
MFA Incorporated
201 Ray Young Drive
Columbia, MO 65201-3599

RE: New Source Review Permit - Project Number: 2011-09-040

Dear Mr. Mahoney:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 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 by telephone 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:dlk

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-09-040

Permit Number: