



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: 122012-016

Project Number: 2012-10-050
Installation Number: 157-0045

Parent Company: •MFA Incorporated

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

Installation Name: MFA Agri Service - Perryville

Installation Address: 3501 S. Highway 61, Perryville, MO 63775

Location Information: Perry County, S32, T 35N, R11W

Application for Authority to Construct was made for:

Installation of five 30 ton overhead hopper bottom bulk feed bins, new receiving conveyors, bucket elevators, and a new 1,000 ton bulk dry fertilizer plant with two 60 ton vertical mixers and an inclined drag conveyor for load out. 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.

DEC 18 2012

EFFECTIVE DATE

Kyra L Moore
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 - Perryville
Perry County, S32, T 35N, R11W

1. PM₁₀ Emission Limitation
 - A. MFA Agri Service - Perryville shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the entire installation as shown in Table 1.

Table 1: Emission Points

Emission Point	Description	MHDR (tons/hr)	Bottlenecked MHDR (tons/hr)
EP-1	Fertilizer Receiving	100.0	100.0
EP-2	Fertilizer Bucket Elevator	100.0	100.0
EP-3	Overhead Auger	100.0	100.0
EP-4	Fertilizer Storage Bays	100.0	100.0
EP-5	Vertical Fertilizer Mixer 1	60.0	50.0
EP-6	Vertical Fertilizer Mixer 2	60.0	50.0
EP-7	Load out Conveyor	100.0	100.0
EP-8	Haul Road	190.0	190.0
EP-F1	Bulk Feed Receiving	90.0	90.0
EP-F2	Feed Conveyor	90.0	90.0
EP-F3	Feed Bucket Elevator	90.0	90.0
EP-F4	Feed Storage Bins	90.0	90.0
EP-F5	Feed Load out Conveyor	90.0	90.0

- 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.

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SPECIAL CONDITIONS:

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

2. Operational Requirement
 - A. MFA Agri Service - Perryville shall keep the fungicides, pesticides, inoculants, liquid fertilizers, and herbicides in sealed containers whenever the materials are not in use. MFA Agri Service - Perryville shall provide and maintain suitable, easily read, permanent markings on all of the above containers.

3. Record Keeping and Reporting Requirements
 - A. MFA Agri Service - Perryville 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. MFA Agri Service - Perryville 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 (6) REVIEW

Project Number: 2012-10-050
Installation ID Number: 157-0045
Permit Number:

MFA Agri Service - Perryville
3501 S. Highway 61
Perryville, MO 63775

Complete: October 24, 2012

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

Perry County, S32, T 35N, R11W

REVIEW SUMMARY

- MFA Agri Service - Perryville has applied for authority to install five 30 ton overhead hopper bottom bulk feed bins, new receiving conveyors, bucket elevators, and a new 1,000 ton bulk dry fertilizer plant with two 60 ton vertical mixers and an inclined drag conveyor for loadout.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation. 40 CFR Part 60 Subpart X - *Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities* does not apply to this facility because the triple superphosphate will be cured prior to receipt. According to the rule definition, Subpart X only applies to facilities that cure or store fresh triple superphosphate.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A building enclosure will be used to limit the particulate matter emissions from the fertilizer plant.
- 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 conditioned below de minimis levels. Potential emissions of PM remain above the de minimis level but below the major source level.
- This installation is located in Perry 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 for this review. No modeling standard is currently available for PM emissions.
- Emission testing is not required for the equipment.
- A Basic Operating Permit application is not required for this installation at this time.
- Approval of this permit is recommended with special conditions.

INSTALLATION/PROJECT DESCRIPTION

MFA Agri Service – Perryville (herein referred to as MFA) has proposed construction of a bulk animal feed receiving and distribution system as well as a 1,000 ton bulk fertilizer plant. This is a new facility and therefore does not have any air permitting history. The feed and fertilizer processes are completely separate. MFA will receive bulk animal feed to be stored for later use in one of the five 30-ton overhead hopper bottom storage bins at a rate of 90.0 tons per hour. The fertilizer plant will consist of a storage building with wood over a concrete floor. There will be a 100.0 ton per hour drive over the receiving conveyor feeding a 100.0 ton per hour bucket elevator. The conveyance system will serve as the fertilizer facility bottleneck. The bucket elevator delivers fertilizer to the overhead conveyor which fills the storage bays. Fertilizer will be moved by bucket loader from storage bays into one of the vertical mixers and then conveyed to trucks for shipping. The vertical mixers are in parallel and each rated at 60.0 tons per hour for a combined MHDR equal to 120.0 tons per hour. The vertical mixers will be bottlenecked at 100.0 tons per hour by the conveyance system. A building enclosure will limit PM emission from the fertilizer plant. Table 1 contains all emission points associated with this project.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 *Grain Elevators and Processes*, May 2003. PTE for feed processes were calculated using emission factors for grain receiving, handling, storage, and shipping. Haul road emissions were calculated using the method recommended in AP-42, Section 13.2.2 *Unpaved Roads*, November 2006. In order to remain conservative, each haul road PTE was calculated under the assumption that all receiving and shipping operations will be carried out by straight trucks. PTE for haul roads were calculated under the assumption that the unpaved road silt content is 8.5%. The fertilizer processes were evaluated for PM, PM₁₀, and PM_{2.5} emissions. AP-42 and WebFIRE (Factor Information Retrieval System), EPA's online emission factor repository, 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

(SCC) 3-01-027-09) using the scale factor that was used in AP-42, Table 9.9.1-1. The PM₁₀ emission factor for fertilizer operations was obtained from WebFIRE.

The following table provides an emissions summary for this project. The facility does not have any existing potential or actual emissions. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). Calculations are based on the bottlenecked MHDR of each piece of equipment. A building enclosure contains the overhead auger (EP-3), storage bays (EP-4), a bucket loader, and the vertical mixers (EP-5, EP-6) of the fertilizer plant. A control efficiency equal to 3.7% was used for the building enclosure associated with the fertilizer plant. The control efficiency for the building enclosure was obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, and Appendix B.2. for AIRS Code 054 process enclosed 3.7 percent.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Controlled Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/A	N/A	321.72	32.93
PM ₁₀	15.0	N/A	N/A	146.56	<15.0
PM _{2.5}	10.0	N/A	N/A	24.99	2.56
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO ₂ e)	100,000	N/A	N/A	N/A	N/A
GHG (mass)	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

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 conditioned below de minimis levels. Potential PM emission remain above the de minimis level but below the major source level.

APPLICABLE REQUIREMENTS

MFA Agri Service - Perryville 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

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.

J Luebbert
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 23, 2012, received October 24, 2012, 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.

Attachment A – PM₁₀ Compliance Worksheet

MFA Agri Service - Perryville
 Perry County, S32, T 35N, R11W
 Project Number: 2012-10-050
 Installation ID Number: 157-0045
 Permit Number: _____

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

(a)	(b)		(c)	(d)	(e)	(f)	(g)	(h)
Month	Material Received (tons)		PM ₁₀ Emission Factor (lb/ton)	Monthly PM ₁₀ Emissions (pounds)	Monthly PM ₁₀ Emissions (tons)	Previous Month's 12-Month PM ₁₀ Emissions (tons)	Monthly PM ₁₀ Emissions from Previous Year (tons)	Current 12-Month PM ₁₀ Emissions (tons)
<i>Ex:</i> 08/2012	<i>Feed</i>	<i>1,000</i>	<i>0.177</i>	<i>177.0</i>	<i>0.966</i>	<i>10.0</i>	<i>1.0</i>	<i>9.966</i>
	<i>Fertilizer</i>	<i>5,000</i>	<i>0.351</i>	<i>1755.0</i>				
	Feed		0.177					
	Fertilizer		0.351					
	Feed		0.177					
	Fertilizer		0.351					
	Feed		0.177					
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	Feed		0.177					
	Fertilizer		0.351					
	Feed		0.177					
	Fertilizer		0.351					

- a) Record the current date.
- b) Record this month's feed received and fertilizer received
- c) Composite PM₁₀ emission factor for each process.
- d) Calculate using the following equation: (d) = (b) x (c)
- e) Calculate using the following equation: (e) = [(d) for seed received + (d) for fertilizer receiving] / 2,000
- f) Record the 12-month PM₁₀ emissions (h) from last month.
- g) Record the monthly PM₁₀ emissions (e) from this month last year.
- h) Calculate the new 12-month PM₁₀ emissions using the following equation: (h) = (e) + (f) – (g)

A rolling 12-month total (h) less than 15.0 tons indicates compliance with Special Condition 1.A.

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 Sheet
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	tph	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		

Mr. Alan Mahoney
Safety, Environmental & Regulatory Manager
MFA Agri Service - Perryville
201 Ray Young Drive
Columbia, MO 65201

RE: New Source Review Permit - Project Number: 2012-10-050

Dear Mr. Mahoney:

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, 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 J Luebbert, 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:jl

Enclosures

c: Southeast Regional Office
PAMS File: 2012-10-050

Permit Number: