



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: 122012-015

Project Number: 2012-10-038
Installation Number: 113-0006

Parent Company: MFA Incorporated

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

Installation Name: MFA Agri Service - Elsberry

Installation Address: 402 North Main Street, Elsberry, MO 63343

Location Information: Lincoln County, S21, T51N, R2E

Application for Authority to Construct was made for:

Construction of three hopper bottom storage bins each with a 3,000 bushel capacity, a portable fill conveyor, an overhead conveyor, reclaim conveyors, seed treater and associated transfer and load out equipment. 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 10 2012

EFFECTIVE DATE

Kyra L. Thomas
 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 - Elsberry
Lincoln County, S 21, T 51N, R 2E

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

Table 1: Emission Points

Emission Point	Description	Pollutant
EP-S1	Bulk Seed Receiving	Particulate Matter
EP-S2	Bulk Seed Storage	Particulate Matter
EP-S3	Conveyance System	Particulate Matter
EP-S4	Seed Weigh Hopper	Particulate Matter
EP-S5	Seed Treater (Blender)	VOC / Particulate Matter
EP-S6	Seed Load out	Particulate Matter
EP-10	Haul Road	Particulate Matter
*EP-1	Fertilizer Receiving	Particulate Matter
*EP-2	Fertilizer Storage	Particulate Matter
*EP-3	Weigh Hopper	Particulate Matter
*EP-4	Bulk Loadout	Particulate Matter
*EP-5	Storage Bin	Particulate Matter
**EP-6	Grain Receiving	Particulate Matter
**EP-7	Bucket Elevator	Particulate Matter
**EP-8	Storage Bin	Particulate Matter
**EP-9	Truck Grain Loadout	Particulate Matter

* = Previously permitted equipment

** = Grandfathered Equipment

2. VOC Emission Limitations
 - A. MFA Agri Service - Elsberry shall emit less than 40.0 tons of VOCs in any consecutive 12-month period from the seed treatment process (EP-S5).

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SPECIAL CONDITIONS:

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

- 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
 - A. MFA Agri Service - Elsberry shall keep the fungicides, pesticides, inoculants, liquid fertilizers, and herbicides in sealed containers whenever the materials are not in use. MFA Agri Service - Elsberry 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 - Elsberry 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
- 5. MFA Agri Service - Elsberry 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: 2012-10-038
Installation ID Number: 113-0006
Permit Number:

MFA Agri Service - Elsberry
402 North Main Street
Elsberry, MO 63343

Complete: October 17, 2012

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

Lincoln County, S 21, T 51N, R 2E

REVIEW SUMMARY

- MFA Agri Service - Elsberry has applied for authority to construct three hopper bottom bins each with a 3,000 bushel capacity, a portable fill conveyor, an overhead conveyor, reclaim conveyors, seed treater (blender) and associated transfer and load out 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.
- 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 de minimis levels. Conditioned potential emissions of PM remain above the de minimis level but below the major source level.
- This installation is located in Lincoln 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 currently exists for PM emissions.

- Emissions testing are not required for the equipment.
- A Basic Operating Permit is no longer required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

MFA Agri Service – Elsberry (herein referred to as MFA) is an existing phosphate fertilizer mixing/storing facility in Elsberry, Missouri. The facility consists of storage for bulk fertilizer, a bucket elevator, a fertilizer mixing unit, bagging and bag closing unit, and the associated conveyance system. MFA has received one de minimis construction permit from the Air Pollution Control Program. The MFA facility also includes a small grandfathered grain operation including grain receiving, a bucket elevator, a storage bin, and truck loadout all with a MHDR equal to 116.0 tons per hour. MFA currently operates under a Basic Operating Permit. However, with the limits taken in this permit, MFA will no longer be required to submit a Basic Operating Permit. MFA receives, mixes, stores, and sells the fertilizer at this facility.

The following New Source Review permit has been issued to MFA Agri Service - Elsberry from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0795-027	Fertilizer Bagging system

PROJECT DESCRIPTION

MFA proposes to install seed treatment equipment. The equipment will include three hopper bottom storage bins, each with a storage capacity equal to 3,000 bushels. The project also includes reclaim conveyors, a seed weigh hopper, an overhead auger, a seed treater, seed load out conveyor, and other associated fill and transfer conveyors. All emission points and associated MHDR are located in Table 3. MFA will be capable of receiving, storing and treating bulk seed at a bottlenecked rate of 36.0 tons per hour. The seed treatment equipment is the sole source of VOC emissions. All VOC contained within the seed treatment material is assumed to be emitted. Cruiser MAXX and Cruiser MAXX PLUS are the proposed seed treatments with application rates equal to 3.0 ounces per 100.0 pounds of seed and 3.2 ounces per 100.0 pounds of seed respectively. A building enclosure will limit PM₁₀ emissions from the seed weigh hopper and the seed blender (treater). The control efficiency of the building enclosure is assumed to be 3.7% for the PTE calculation. There are no other control devices in place at the MFA facility.

MFA has requested a voluntary VOC emission limit below the de minimis level of 40.0 tons per year for the entire facility. MFA has requested a voluntary PM₁₀ emission limit below the de minimis level of 15.0 tons in any 12-month period for the entire facility as shown in Table 3. The PTE of existing emission units as well as new emission units

were calculated in order to establish composite emission factors used in recordkeeping. The seed conveyor (EP-S3) will serve as the project bottleneck equal to 36.0 tons per hour. The fertilizer weigh hopper (EP-3) continues to serve as the bottleneck equal to 45.0 tons per hour for the fertilizer processes. The grain equipment is all rated at 116.0 tons per hour. The haul road calculation is based on a worst case scenario with all three processes receiving at maximum capacity.

Table 3: Equipment MHDR

Emission Point	Description	MHDR (tons/hour)	Bottlenecked MHDR (tons/hour)
EP-S1	Seed Receiving	60.0	36.0
EP-S2	Seed Storage Bin	60.0	36.0
EP-S3	Seed Conveyor	36.0	36.0
EP-S4	Seed Weigh Hopper	36.0	36.0
EP-S5	Seed Treater (Blender)	36.0	36.0
EP-S6	Seed Load out	36.0	36.0
EP-10	Haul Road	197.0	197.0
*EP-1	Fertilizer Receiving	60.0	45.0
*EP-2	Fertilizer Storage	60.0	45.0
*EP-3	Weigh Hopper	45.0	45.0
*EP-4	Bulk Loadout	45.0	45.0
*EP-5	Storage Bin	18.0	18.0
**EP-6	Grain Receiving	116.0	116.0
**EP-7	Bucket Elevator	116.0	116.0
**EP-8	Storage Bin	116.0	116.0
**EP-9	Grain Truck Loadout	116.0	116.0

* = Previously permitted equipment

** = Grandfathered Equipment

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. Haul road emissions were calculated using AP-42, Section 13.2.2, *Unpaved Roads*, November 2006. 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, do not contain PM_{2.5} emission factors 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. Potential VOC emissions were calculated using a mass balance with the VOC content provided by the manufacturer. 100% of the VOCs are assumed to be emitted.

The following table provides an emissions summary for this project. Existing unconditioned potential emissions were taken from permit number 0795-027. The existing potential emission of total suspended particulate (TSP) is assumed to be PM. When the original construction permit was written for this facility, PM_{2.5} was not a regulated pollutant. Therefore, the PM_{2.5} existing potential emissions were estimated using the emission factor given in the previous paragraph. Existing actual emissions

were taken from the installation's 2011 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). A building enclosure will limit PM₁₀ emissions from the seed weigh hopper and the seed blender. The control efficiency of the building enclosure is assumed to be 3.7% for the PTE calculation.

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Conditioned Potential Emissions	Existing Actual Emissions (2011 EIQ)	Controlled Potential Emissions of the Project	Installation Conditioned Potential Emissions
PM	25.0	30.47	22.48	*Minimal	81.0	38.96
PM ₁₀	15.0	20.33	<15.0	*Minimal	29.91	<15.0
PM _{2.5}	10.0	5.08	3.75	*Minimal	4.85	2.55
SOx	40.0	N/A	N/A	*Minimal	N/A	N/A
NOx	40.0	N/A	N/A	*Minimal	N/A	N/A
VOC	40.0	N/A	N/A	*Minimal	158.76	<40.0
CO	100.0	N/A	N/A	*Minimal	N/A	N/A
GHG (CO ₂ e)	75,000 / 100,000	N/A	N/A	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0	N/A	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	*Minimal	N/A	N/A

*Minimal = Actual emissions are below reporting thresholds for EIQ;
 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 and VOC are conditioned below de minimis levels for the entire installation. Potential emissions of PM remain above the de minimis level but below the major source level.

APPLICABLE REQUIREMENTS

MFA Agri Service - Elsberry 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. For a complete list of applicable requirements for your installation, please consult your operating permit.

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 16, 2012, received October 17, 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 - Elsberry
 Lincoln County, S21, T51N, R2E
 Project Number: 2012-10-038
 Installation ID Number: 113-0006
 Permit Number: _____

(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>Example 08/2012</i>	<i>Seed</i>	<i>10,000</i>	<i>0.190</i>	<i>1,900.0</i>	<i>1.603</i>	<i>2.0</i>	<i>1.0</i>	<i>2.603</i>
	<i>Grain</i>	<i>5,000</i>	<i>0.150</i>	<i>750.0</i>				
	<i>Fertilizer</i>	<i>5,000</i>	<i>0.111</i>	<i>555.0</i>				
	Seed		0.190					
	Grain		0.150					
	Fertilizer		0.111					
	Seed		0.190					
	Grain		0.150					
	Fertilizer		0.111					
	Seed		0.190					
	Grain		0.150					
	Fertilizer		0.111					
	Seed		0.190					
	Grain		0.150					
	Fertilizer		0.111					
	Seed		0.190					
	Grain		0.150					
	Fertilizer		0.111					
	Seed		0.190					
	Grain		0.150					
	Fertilizer		0.111					
	Seed		0.190					
	Grain		0.150					
	Fertilizer		0.111					

- a) Record the current date. (Month, Year)
- b) Record this month's seed, grain, and fertilizer received.
- c) 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 grain received + (d) for fertilizer received] / 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. (h) = (e) + (f) – (g)

Rolling 12-month emissions 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 National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

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

RE: New Source Review Permit - Project Number: 2012-10-038

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, 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: St. Louis Regional Office
PAMS File: 2012-10-038

Permit Number: