



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: **012013-010**

Project Number: 2012-12-014
Installation Number: 107-0012

Parent Company: MFA Incorporated

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

Installation Name: MFA Agri Service - Alma

Installation Address: 106 East Collins Street, Alma, MO 64001

Location Information: Lafayette County, S27, T50N, R24W

Application for Authority to Construct was made for:

The installation of five overhead 54-ton hopper-bottom bulk feed bins, a 200-bushel capacity receiving pit, fill pipes, a 150.0 ton per hour drag conveyor, and a 150.0 ton per hour bucket elevator. 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 31 2013

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 startup 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 startup 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.

Page No.	3
Permit No.	
Project No.	2012-12-014

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 - Alma
Lafayette County, S27, T50N, R24W

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in the previously issued Construction Permits 102003-007 and 102003-008 issued by the Air Pollution Control Program. The Construction Permits 0496-014 and 0997-002 were superseded by previously issued permits.
2. **PM₁₀ Emission Limitation**
 - A. MFA Agri Service - Alma 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: Facility Wide Emission Points

Emission Point	Description	Bottlenecked MHDR	MHDR Units
EP-1a	Grain Receiving West	120.0	Tons/hr
EP-1b	Grain Receiving (Feed)	12.0	Tons/hr
EP-2	*Grain Handling	120.0	Tons/hr
EP-4	Bucket Elevator	120.0	Tons/hr
EP-5a	Truck Loadout (Grain)	120.0	Tons/hr
EP-5b	Rail Loadout (Grain)	120.0	Tons/hr
EP-6	Grain Receiving East	120.0	Tons/hr
EP-7	Bucket Elevator (Feed)	12.0	Tons/hr
EP-8	Grinder/Roller mill (Feed)	8.0	Tons/hr
EP-9	Bucket Elevator (Feed)	12.0	Tons/hr
EP-10	Bulk Loadout (Feed)	12.0	Tons/hr
EP-23	*Feed Mixer	12.0	Tons/hr
EP-25	Feed Bagging	2.0	Tons/hr
EP-27	Feed Storage Bin	12.0	Tons/hr
EP-F1	**Bulk Feed Receiving	150.0	Tons/hr
EP-F2	**Bulk Feed Storage Bin	150.0	Tons/hr
EP-F3	** Bulk Feed Loadout	150.0	Tons/hr
EP-26a	Grain Haul Road	1.6	VMT/hr
EP-26b	Feed Haul Road	0.16	VMT/hr
EP-26c	**Bulk Feed Haul Road	1.894	VMT/hr

* = Bottleneck
** = New Project

Page No.	4
Permit No.	
Project No.	2012-12-014

SPECIAL CONDITIONS:

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

- 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 2.A.
3. Record Keeping and Reporting Requirements
- A. MFA Agri Service - Alma 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.
 - B. MFA Agri Service - Alma 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: 2012-12-014
Installation ID Number: 107-0012
Permit Number:

MFA Agri Service - Alma
106 East Collins Street
Alma, MO 64001

Complete: December 4, 2012

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

Lafayette County, S27, T50N, R24W

REVIEW SUMMARY

- MFA Agri Service - Alma has applied for authority to install five overhead 54-ton hopper-bottom bulk feed bins, a 200-bushel capacity receiving pit, fill pipes, a 150.0 ton per hour drag conveyor, and a 150.0 ton per hour bucket elevator.
- 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 DD: *Standards of Performance for Grain Elevators* does not apply to this installation because the permanent grain storage capacity is less than 2.5 million bushels.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Restriction of Emission of Particulate Matter from Industrial Processes, 10 CSR 10-6.400 applies to the storage bins located at this facility, but MFA is in compliance with the rule.
- 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 from the entire installation are conditioned below de minimis levels. Potential emissions of PM are above the de minimis level but remains below the major source level.
- This installation is located in Lafayette 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 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 Agri Service – Alma (herein referred to as MFA) is an existing grain elevator that also produces animal feed on site. MFA previously received and distributed fertilizer. Fertilizer receiving (EP-11), fertilizer handling (EP-12), and fertilizer shipping (EP-13) have been dismantled and deemed inoperable. MFA has disassembled the grain dryer (EP-3a,b), the pellet mill (EP-22), pellet leg, molasses mixer, and the boiler (EP-24). Additionally the wet leg which was associated with the west grain receiving pit will be relocated to the bulk feed receiving area. This project includes the reevaluation of emission points throughout the facility. MFA will continue to receive grain. MFA currently operates under a Basic Operating Permit. However, after this project and the associated PM₁₀ emissions limitation, MFA will not require an operating permit.

The following New Source Review permits have been issued to MFA from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0496-014	Modifications to the existing facility
0997-002	Additional elevator legs, distributor, dryers, and drag conveyor
102003-007	Emission factor update
102003-008	Emission factor update

PROJECT DESCRIPTION

MFA has proposed the installation of five overhead 54-ton hopper-bottom bulk feed bins, a 200-bushel capacity receiving pit, fill pipes, a 150.0 ton per hour drag conveyor, and a 150.0 ton per hour bucket elevator. The bulk feed process will be limited by a conveyance system bottleneck equal to 150.0 tons per hour. MFA will receive bulk feed by truck, store the feed, and ship the feed by truck. MFA has the potential to emit particulate matter from the bulk feed process, grain processes, and feed production processes. No other pollutants are expected from this facility because the boiler and dryer have been removed from the facility. No control devices will be installed to limit particulate matter emissions.

EMISSIONS/CONTROLS EVALUATION

The emission factors 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. A conservative estimate of 50% straight trucks and 50% hopper trucks was assumed for the purpose of calculating emissions from haul roads and grain receiving. Emission factors do not currently exist for grain roller mills. Therefore the emission factor for a grain cracker was used in the potential to emit calculation for the roller mill. However, the emission factor for a grain cracker provided by AP-42 assumes operation of a cyclone on the exhaust of the equipment. The control efficiency of the cyclone was assumed to be 80%. By back calculating the emission factor for the grain cracker, an emission factor for the roller mill was established. Several emission factors for the grain process listed in AP-42 do not contain emission factors for PM_{2.5}. However, according to AP-42 Section 9.9.1, the fraction of dust particles less than 2.5 microns in aerodynamic diameter (PM_{2.5}) averages about seventeen percent of PM₁₀ at grain elevators. Therefore, emission factors for the affected emission points were estimated as seventeen percent of the corresponding PM₁₀ emission factor. MFA has not installed any control devices to limit the emission of particulate matter.

The following table provides an emissions summary for this project. Existing potential emissions were taken from Construction Permit 102003-08. Existing actual emissions were taken from the installation's 2007 EIQ. The 2007 EIQ was used for the existing actual emissions because 2007 is the last year MFA submitted a full EIQ to the Air Pollution Control Program. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). MFA has the potential to emit particulate matter. MFA no longer has the potential to emit other pollutants because the facility has removed equipment that combusts natural gas.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2007 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	67.68	39.68
PM ₁₀	15.0	<30.0	0.99	28.12	<15.0
PM _{2.5}	10.0	N/D	0.1163	4.94	2.40
SO _x	40.0	0.01	0.0	0.0	0.0
NO _x	40.0	1.31	0.0	0.0	0.0
VOC	40.0	0.07	0.0	0.0	0.0
CO	100.0	1.10	0.0	0.0	0.0
GHG (CO ₂ e)	75,000 / 100,000	N/D	N/D	0.0	0.0
GHG (mass)	0.0 / 100.0 / 250.0	N/D	N/D	0.0	0.0
HAPs	10.0/25.0	0.02	0.0	0.0	0.0

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 are conditioned below de minimis levels. Potential emissions of PM are above the de minimis level but remains below the major source level.

APPLICABLE REQUIREMENTS

MFA Agri Service - Alma 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

- *New Source Performance Regulations*, 10 CSR 10-6.070
 - *Standards of Performance for Grain Elevators*, 40 CFR Part 60, Subpart DD does not apply to this installation because the permanent grain storage capacity is less than 2.5 million bushels.
- *Restriction of Emission of Particulate Matter from Industrial Processes*, 10 CSR 10-6.400 applies to the storage bins located at this facility. However, MFA is in compliance with this rule as the potential of the facility is 3.75 lb of PM/hr which is less than the limit of 55.44 lbs of PM/hr as stated in the rule.

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 December 4, 2012, received December 10, 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 - Alma
 Lafayette County, S27, T50N, R24W
 Project Number: 2012-12-014
 Installation ID Number: 107-0012
 Permit Number: _____

This sheet covers the period from _____ to _____.
 (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>Example 08/2012</i>	<i>Grain</i>	<i>10,000</i>	<i>0.046</i>	<i>460.0</i>	<i>0.83</i>	<i>2.0</i>	<i>1.0</i>	<i>1.83</i>
	<i>Feed</i>	<i>5,000</i>	<i>0.175</i>	<i>875.0</i>				
	<i>Bulk Feed</i>	<i>5,000</i>	<i>0.065</i>	<i>325.0</i>				
	Grain		0.046					
	Feed		0.175					
	Bulk Feed		0.065					
	Grain		0.046					
	Feed		0.175					
	Bulk Feed		0.065					
	Grain		0.046					
	Feed		0.175					
	Bulk Feed		0.065					
	Grain		0.046					
	Feed		0.175					
	Bulk Feed		0.065					
	Grain		0.046					
	Feed		0.175					
	Bulk Feed		0.065					
	Grain		0.046					
	Feed		0.175					
	Bulk Feed		0.065					

- a) Record the current date. (Month, Year)
- b) Record this month's grain, grain for feed, and bulk feed 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 grain received + (d) for grain received for feed + (d) for bulk feed 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)

A 12-month rolling total less than 15.0 tons indicates compliance with Special Condition 2.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 - Alma
201 Ray Young Drive
Columbia, MO 65201

RE: New Source Review Permit - Project Number: 2012-12-014

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 by telephone 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:jlk

Enclosures

c: Kansas City Regional Office
PAMS File: 2012-12-014

Permit Number: