



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: 062020-017 Project Number: 2019-04-003
Installation Number: 171-0003

Parent Company: Putnam County MFA Exchange

Parent Company Address: 520 South 23rd Street, Unionville, MO 63565

Installation Name: Putnam County MFA Exchange

Installation Address: 520 South 23rd Street, Unionville, MO 63565

Location Information: Putnam County, S3, T65N, R19W

Application for Authority to Construct was made for:
Construction of a corn feed mill. This review was conducted in accordance with Section (5), 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.

Director or Designee
Department of Natural Resources

June 25, 2020
Effective Date

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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's 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 the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

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 to 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 (3)(E). "Conditions required by permitting authority."

Putnam County MFA Exchange
Putnam County, S3, T65N, R19W

1. **PM₁₀ Emission Limitation**
 - A. Putnam County MFA Exchange shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the feed mill system (see Table 2) The SSM emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section in accordance with the requirements of 10 CSR 10-6.050 *Start-Up, Shutdown, and Malfunction Conditions* shall be included in the limit.
 - B. Attachment A or equivalent forms, such as electronic forms, using the emission factors approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. **Capture Device Requirement - Enclosures**
 - A. Putnam County MFA Exchange shall control emissions from the roll grinder (EP-11), roll cracker (EP-12), and corn handling (EP-13) emission points by installing enclosures to capture the PM₁₀ emissions.
 - B. Putnam County MFA Exchange personnel shall inspect each of the enclosures listed in Special Condition 2.A. on a quarterly basis for any signs of visible particulate emissions. If visible particulate emissions are present, corrective action must be taken to return the equipment back to the state of intended performance (such that visible particulate emissions are no longer present during operation). The results of the inspections, along with documentation regarding any corrective actions, shall be recorded.
3. **Record Keeping and Reporting Requirements**
 - A. Putnam County MFA Exchange 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.

SPECIAL CONDITIONS:

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

- B. Putnam County MFA Exchange shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, no later than 10 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 (5) REVIEW

Project Number: 2019-04-003
Installation ID Number: 171-0003
Permit Number: 062020-017

Installation Address:

Putnam County MFA Exchange
520 South 23rd Street
Unionville, MO 63565

Parent Company:

Putnam County MFA Exchange
520 South 23rd Street
Unionville, MO 63565

Putnam County, S3, T65N, R19W

REVIEW SUMMARY

- Putnam County MFA Exchange has applied for authority to rebuild a corn feed mill following a fire.
- The application was deemed complete on December 27, 2019.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation. Specifically, NSPS DD does not apply to this installation because the total storage capacity is less than the threshold of 2.5 million bushels for grain terminal elevators and 1 million bushels for grain storage elevators.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Enclosures are being used to control the PM₁₀ emissions from the roll grinder (EP-11), roll cracker (EP-12), and corn handling (EP-13) emission points in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels.
- This installation is located in Putnam County, an attainment/unclassifiable 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 the application are conditioned below de minimis levels.

- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- No operating permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Putnam County MFA Exchange owns and operates a grain storage facility and a corn feed mill in Unionville, Missouri. Putnam County MFA Exchange operates this facility for the purposes of receiving and storing grains received from farmers in the surrounding area and supplying cattle feed. The grain storage facility was originally permitted in 1987 under construction permit #1187-010 and was calculated to have a PTE of 7.2 tpy of PM₁₀. Twelve bins make up the grain storage area that can hold a maximum of 437,600 bushels. In the period of time between 1987 and 2016, a warehouse containing a corn feed mill was constructed. However, In July of 2016, the warehouse burned down. Shortly after, a new warehouse, office, and feed mill system were built, and have been in operation since February of 2018.

The following NSR permit has been issued to Putnam County MFA Exchange from the Air Pollution Control Program.

Table 1: NSR Permit History

Permit Number	Description
1187-010	500,000 bushel grain storage

PROJECT DESCRIPTION

Putnam County MFA Exchange has installed a new feed mill system that includes a roll grinder, roll cracker, two mixers, a truck loadout station, and a sacking hopper all connected with enclosed conveyance. The feed mill system will be used to mill field corn from farms in the surrounding area to be used as cattle feed. With the new facility, Putnam County MFA Exchange runs field corn through either a roll cracker or double roll grinder. The ground or cracked corn is then then conveyed into a respective mixer. A unifying finish leg then sends the corn from the mixers to be loaded out by truck or to a sacking hopper to be bagged and stored in the warehouse. Putnam County MFA Exchange uses city roads located around the perimeter of the facility for shipping and receiving, and thus no haul road calculations are required.

The Roll Grinder (EP-11) and Roll Cracker (EP-12) have a MHDR of 30 tons each and function as bottlenecks for the rest of the feed mill system. Because the roll grinder and roll cracker can run at the same time, the corn handling (EP-13), sacking hopper (EP-14), and truck loadout (EP-15) emission points have been attributed with a MHDR of 60 tons.

Putnam County MFA Exchange is controlling emissions by enclosing the roll grinder (EP-11), roll cracker (EP-12), and corn handling (EP-13). EP-13 includes the drop points following the roll grinder and roll cracker, the conveyance of the corn, and the drop points following the mixers. The enclosing of the piping and conveyors will allow some of the particulate matter to settle with the bulk of the ground corn instead of being emitted into the air. In addition to these controls, Putnam County MFA Exchange will also be taking a 15 tpy limit on PM₁₀ in order to keep project emissions below de minimis levels.

Table 2: Project Emission Point Summary

Emission Point No.	Description	MHDR (tons)	Control Device
EP-11	Roll Grinder/Mill	30	Enclosure
EP-12	Roll Cracker	30	Enclosure
EP-13	Corn Handling	60	Enclosure
EP-14	Sacking Hopper	60	None
EP-15	Truck Loadout	60	None
EP-16	Truck Receiving	60	None

Table 3 below lists all of the emission points currently located at Putnam County MFA Exchange's Unionville location.

Table 3: Installation-Wide Emission Point Summary

Emission Point No.	Description
EP-01	Grain Receiving
EP-02	Bucket Elevator
EP-03	Dryer-Natural Gas
EP-04	Truck Loadout
EP-05	Receiving Pit-Feed
EP-06	Internal Handling-Leg
EP-08	Bulk Loading/Bagging
EP-09	Haul Road
EP-10	Bin Loading (Vents) Grain
EP-11	Roll Grinder/Mill
EP-12	Roll Cracker
EP-13	Corn Handling
EP-14	Sacking Hopper
EP-15	Truck Loadout
EP-16	Truck Receiving

EMISSIONS/CONTROLS EVALUATION

The emission factors for the roll grinder (EP-11), corn handling (EP-13), sacking hopper (EP-14), truck loadout (EP-15), and truck receiving (EP-16) used in this analysis were

obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, 9.9.1 *Grain Elevators and Processes* (May 2003). The emission factor for the roll cracker (EP-12) was obtained from WebFire using SCC 30200819. Both the roll grinder and roll cracker emission factors obtained from these sources included control from a cyclone. Due to the lack of a cyclone for this project, pure emission factors were back calculated assuming that a standard 95% control efficiency was given for the use of cyclones.

A 50% control efficiency for PM, a 25% control efficiency for PM₁₀, and a 5% control efficiency for PM_{2.5} was given for the enclosures used for the roll grinder and roll cracker drop points and corn handling. The 50% control efficiency for PM was derived from the 1996 *CHEER Workshop Manual*, in which it was summarized that enclosed conveyors and partially enclosed drop points both overlapped in that range. A 50% control efficiency allows for a less rigorous testing procedure to maintain compliance, which is a better fit for this system. PM₁₀ was given half as much control as PM, and PM_{2.5} was given one tenth as much control as PM due to the correlation of particle size and control efficiency of enclosures.

The following table provides an emissions summary for this project. Existing potential emissions were taken from construction permit #1187-010, assuming an annual throughput of 600 tons of corn through the grain bins. Existing actual emissions were taken from the installation's 2019 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 4: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2019 EIQ)	Potential Emissions of the Project	Project Conditioned Potential
PM	25.0	N/D	N/D	329.16	20.29
PM ₁₀	15.0	7.2	0.19	220.80	< 15.00
PM _{2.5}	10.0	N/D	0.02	34.13	2.32
SO _x	40.0	N/D	2.0 x 10 ⁻⁴	N/A	N/A
NO _x	40.0	N/D	0.35	N/A	N/A
VOC	40.0	N/D	1.9 x 10 ⁻³	N/A	N/A
CO	100.0	N/D	0.03	N/A	N/A
GHG (CO ₂ e)	N/A	N/D	N/D	N/A	N/A
GHG (mass)	N/A	N/D	N/D	N/A	N/A
HAPs	10.0/25.0	N/D	N/A	N/A	N/A

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

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Putnam County MFA Exchange 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

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *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

- *No New Source Performance Regulations (NSPS), MACT Regulations, or Emission Standards for Hazardous Air Pollutants (NESHAP)* apply to the installation.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 14, 2019, received April, 1 2019, designating Putnam County MFA Exchange as the owner and operator of the installation.

Attachment A – PM₁₀ Compliance Worksheet

Putnam County MFA Exchange
 Putnam County, S3, T65N, R19W
 Project Number: 2019-04-003
 Installation ID Number: 172-0003
 Permit Number: 062020-017

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

(a) Process (Grinding/ Cracking)	(b) Monthly Amount Ground (tons)	(c) Composite Grinding PM ₁₀ Emission Factor (lbs/ton)	(d) Composite Cracking PM ₁₀ Emission Factor (lbs/ton)	(e) Monthly Process PM ₁₀ Emissions (tons)	(f) Monthly SSM PM ₁₀ Emissions (tons)	(g) Monthly Total PM ₁₀ Emissions (tons)
		0.7691	0.3494			
(h) 12-Month Rolling Total PM₁₀ Emissions						

(e) For Grinding:
 Multiply (b) and (c), and then divide by 2000: $(b) \times (c) / 2000 = (e)$
 For Cracking:
 Multiply (b) and (d), and then divide by 2000: $(b) \times (d) / 2000 = (e)$
 (f) The Monthly Startup, Shutdown, and Malfunction Emissions are to be reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.
 (g) Add (e) the Monthly Process PM₁₀ Emissions (tons) and (f) Monthly SSM PM₁₀ Emissions (tons)
 (h) The 12-Month Rolling Total PM₁₀ Emissions (tons/year) are a rolling total calculated by adding the Month's Total PM₁₀ Emissions (tons) to the Monthly Total PM₁₀ Emissions (tons) of the previous eleven (11) months. A total of less than 15 tons in any consecutive 12-month period indicates compliance.

APPENDIX A

Abbreviations and Acronyms

% percent	Mgal 1,000 gallons
°F degrees Fahrenheit	MW megawatt
acfm actual cubic feet per minute	MHDR maximum hourly design rate
BACT Best Available Control Technology	MMBtu Million British thermal units
BMPs Best Management Practices	MMCF million cubic feet
Btu British thermal unit	MSDS Material Safety Data Sheet
CAM Compliance Assurance Monitoring	NAAQS National Ambient Air Quality Standards
CAS Chemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMS Continuous Emission Monitor System	NO_xnitrogen oxides
CFR Code of Federal Regulations	NSPS New Source Performance Standards
CO carbon monoxide	NSR New Source Review
CO₂ carbon dioxide	PMparticulate matter
CO_{2e} carbon dioxide equivalent	PM_{2.5} particulate matter less than 2.5 microns in aerodynamic diameter
COMS Continuous Opacity Monitoring System	PM₁₀ particulate matter less than 10 microns in aerodynamic diameter
CSR Code of State Regulations	ppm parts per million
dscf dry standard cubic feet	PSD Prevention of Significant Deterioration
EIQ Emission Inventory Questionnaire	PTE potential to emit
EP Emission Point	RACT Reasonable Available Control Technology
EPA Environmental Protection Agency	RAL Risk Assessment Level
EU Emission Unit	SCC Source Classification Code
fps feet per second	scfm standard cubic feet per minute
ft feet	SDS Safety Data Sheet
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	SSM Startup, Shutdown & Malfunction
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	
m/s meters per second	



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

June 25, 2020

Mike Tomlin
Manager
Putnam County MFA Exchange
520 South 23rd Street
Unionville, MO 63565

RE: New Source Review Permit - Project Number: 2019-04-003

Dear Mike Tomlin:

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 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 are 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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

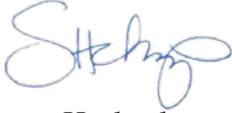


Mike Tomlin
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If you have any questions regarding this permit, please do not hesitate to contact Dakota Fox at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

A handwritten signature in blue ink, appearing to read "S Heckenkamp".

Susan Heckenkamp
New Source Review Unit Chief

SH:dfa

Enclosures

c: Northeast Regional Office
PAMS File: 2019-04-003

Permit Number: 062020-017