

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: 112014-003 Project Number: 2014-08-033
Installation Number: 159-0037

Parent Company: Tyson Foods, Inc.

Parent Company Address: P.O. Box 2020, Springdale, AR 72765

Installation Name: Tyson Foods, Inc.

Installation Address: 19571 Whitfield Road, Sedalia, MO 65302

Location Information: Pettis County, S22, T46N, R22W

Application for Authority to Construct was made for:
Increase throughput limitation on three fryers. 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.

NOV 5 - 2014

EFFECTIVE DATE

A handwritten signature in cursive script, appearing to read "Kyrin 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."

Tyson Foods, Inc.
Pettis County, S22, T46N, R22W

1. Control Device Requirement - Venturi Scrubber
 - A. Tyson Foods, Inc. shall control emissions from Fryer Line 2 (EP-51, EU-033) the listed equipment using a venturi scrubber as specified in the permit application.
 - B. The venturi scrubber shall be operated and maintained in accordance with the manufacturer's specifications. The venturi scrubber shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
 - C. Tyson Foods, Inc. shall monitor and record the operating pressure drop across the venturi scrubber at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - D. Tyson Foods, Inc. shall maintain a copy of the venturi scrubber manufacturer's performance warranty on site.
 - E. Tyson Foods, Inc. shall maintain an operating and maintenance log for the venturi scrubber which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
2. Record Keeping and Reporting Requirements
 - A. Tyson Foods, Inc. 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.

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SPECIAL CONDITIONS:

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

- B. Tyson Foods, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 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 (5) REVIEW

Project Number: 2014-08-033
Installation ID Number: 159-0037
Permit Number:

Tyson Foods, Inc.
19571 Whitfield Road
Sedalia, MO 65302

Complete: September 8, 2014

Parent Company:
Tyson Foods, Inc.
P.O. Box 2020
Springdale, AR 72765

Pettis County, S22, T46N, R22W

REVIEW SUMMARY

- Tyson Foods, Inc. has applied for authority to increase the throughput limitation on three fryers.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
 - NSPS 40 CFR Part 60 Subpart Dc: *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* does not apply to this facility because the natural gas burner does not exceed 10MMBtu/hr heat input.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A venturi scrubber is being used to control particulate emissions from fryer line 2.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- 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 the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- An Intermediate Operating Permit application has been received by the Air Pollution Control Program. A revision to the application is required within 90 days of startup of equipment.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Tyson Foods, Inc. operates a chicken slaughter and processing facility in the Sedalia facility. The facility also operates a further protein processing plant that is equipped to render and produce meat meal and feather/blood meal. The processing equipment at this facility that vents to the atmosphere consists of boilers, hot water heaters, ovens, fryers and thermal fluid heaters.

Tyson Foods, Inc. currently has an Intermediate Operating Permit renewal application under review (Project No. 2012-03-030) that limits the emissions of each pollutant to less than 100 tons per year.

The following New Source Review permits have been issued to Tyson Foods, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
1095-017	De minimis Permit for chicken processing plant
1097-029	Permit for protein conversion operation
0798-037	De minimis Permit for 10 MMBtu fluid heater
0798-002	Amendment for odor control chemical substitution
1198-014	De minimis Permit for increased oven capacity
0799-004	De minimis Permit for searing machine
052001-027	De minimis Permit for ovens and fryers
102001-004	De minimis Permit for burning of poultry fat in boilers
122005-010	De minimis Permit for a boiler and a meat meal cooker
062006-010	De minimis Permit for a boiler, fryer and oven
122011-004	De minimis Permit for grinding and screening operations
122011-006	De minimis Permit for a thermal fluid heater

PROJECT DESCRIPTION

Tyson Foods, Inc. currently has six fryers permitted for operation at Sedalia, MO. Tyson has requested to increase the line throughput capacity of three of the six fryers (EP-40, EP-51, and EP-59). Most of the frying lines consist of marinating, breading, frying, oven cooking, freezing, and packaging. Through operation of the existing frying lines, Tyson

has identified that three of the fryers can operate at higher throughput rates than what has been permitted by the Air Pollution Control Program. The three fryers are currently bottlenecked by their respective freezing processes; however, Tyson has proposed the replacement of the existing freezers, debottlenecking these three frying lines. As a result; the MHDR of the three fryers will be increased to their true MHDR. Chicken throughput in the ovens will increase as well, however there will be no increase in emissions since the ovens have already been permitted for their maximum Btu/hr heat output.

- The MHDR of the stein fryer in Line 1 (EP-40) will change from 3 tph to 3.25 tph.
- The MHDR of the stein fryer in Line 2 (EP-51) will change from 3 tph to 7 tph.
- The MHDR of the stein fryer in Line 3 (EP-59) will change from 5 tph to 7 tph.

Tyson has installed scrubbers on Line 2 and Line 3. Permit 062006-010 credited the scrubber on Line 3 with a control efficiency of 95%. No permit has been issued that credits the emission controls on Line 2, thus the scrubber is included in this project to make its use federally enforceable.

Tyson currently operates a 0.4 MMBtu/hr natural gas char marker in Line 3. This unit has not been addressed in previous permits and thus is being included in the emissions evaluation.

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 9.13.3, *Snack Chip Deep Fat Frying* (01/1995) and a stack test performed at Anchor Foods in Wisconsin on September 19, 1995. MDNR has accepted the stack test results in previously issued permits for estimating emissions from the fryers at this installation. The PM and PM₁₀ emissions were assumed to be the same and estimated using a PM emission factor of 0.42 lb/ton. The control efficiency for the venturi scrubber is 99% according to the vendor, Solber Manufacturing; however, Tyson is only claiming 95%, as this was the efficiency given to the scrubber in the previous permit. Emission factors from the *Snack Chip Deep Fat Flying* section of AP-42 were utilized for VOC emissions due to the lack of directly applicable emission factors.

The emission factors for the natural gas char marker were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, *Natural Gas Combustion*, Section 1.4, July 1998.

The following table provides an emissions summary for this project. Existing potential emissions are limited by the installation's Intermediate Operating Permit. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the modified equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ^[1,2,3]	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	0.01	7.27	N/A
PM ₁₀	15.0	112.04	2.33	7.28	N/A
PM _{2.5}	10.0	1.02	1.81	0.01	N/A
SOx	40.0	1.91	0.09	0.00	N/A
NOx	40.0	221.22	13.55	0.17	N/A
VOC	40.0	14.94	0.81	6.43	N/A
CO	100.0	89.27	11.26	0.14	N/A
HAPs	10.0/25.0	0.67	N/D	0.00	N/A

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

¹ Tyson is limited to less than 100 tons per year for each criteria pollutant in the intermediate operating permit number OP2007-049.

² Existing potential emissions include limits found in previously issued construction permits, but do not include voluntary conditions accepted in the intermediate operating permit.

³ Potential emissions of NO_x consider an installation-wide 100 ton limit in permit number 1097-029, subsequent construction permits did not have limits on NO_x emissions.

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 all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Tyson Foods, Inc. 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
- *Operating Permits*, 10 CSR 10-6.065

- *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 Sulfur Compounds*, 10 CSR 10-6.260
- *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 (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

 Bryce Mihalevich
 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 August 13, 2014, received August 15, 2014, designating Tyson Foods, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

%percent	m/s meters per second
°Fdegrees Fahrenheit	Mgal 1,000 gallons
acfmactual 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	SDS Safety Data Sheet
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/m³micrograms per cubic meter	

Mr. Jason McCauley
Complex Environmental Manager
Tyson Foods, Inc.
19571 Whitfield Road
Sedalia, MO 65302

RE: New Source Review Permit - Project Number: 2014-08-033

Dear Mr. McCauley:

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, your new source review permit application and with your amended operating permit 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 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: website: www.oa.mo.gov/ahc.

If you have any questions regarding this permit, please do not hesitate to contact Bryce Mihalevich, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:bml

Enclosures

c: Kansas City Regional Office
PAMS File: 2014-08-033
Permit Number: