

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: 122011-004 Project Number: 2011-05-025
Installation Number: 159-0037

Parent Company: Tyson Foods, Incorporated
Parent Company Address: P.O. Box 2020, Springdale, AR 72765
Installation Name: Tyson Foods, Incorporated
Installation Address: 19571 Whitfield Road, Sedalia, MO 65302
Location Information: Pettis County, S22, T46N, R22W

Application for Authority to Construct was made for:
Installation of a new hammermill and rotex screen. The new equipment will also increase the capacity of the rendering plant. 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.

DEC - 6 2011

EFFECTIVE DATE

Nancy F. for Kyril L. Moon

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 Departments' 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.

Page No.	3
Permit No.	
Project No.	2011-05-025

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, Incorporated
Pettis County, S22, T46N, R22W

1. **Superseding Condition**
The conditions of this permit supersede the following special conditions found in previously issued construction permits from the Air Pollution Control Program.
 - A. Construction Permit 122005-010, Special Condition 1
 - B. Construction Permit 1198-014, Special Condition 1

2. **Control Device Requirement – Cyclone and Scrubbers**
 - A. Tyson Foods, Incorporated shall control emissions from the grinding room equipment listed in the Table below using the following pollution control train, in sequence: 4,000 cubic feet per minute (cfm) cyclone (CD-06), 10,000 cfm venturi scrubber (CD-04), and a 75,000 cfm packed bed scrubber (CD-05) as specified in the permit application.

Table 1: Grinding Room Emission Units

ID	Description
EU55-A	Storage Bin
EU55-B	Hammermill
EU55-C	Rotex Screen
EU55-D	Hammermill
EU55-E	Rotex Screen
EU55-F	Weigh Bin Blender

- B. Tyson Foods, Incorporated shall develop and implement a control device monitoring plan to verify the proper operation of the control equipment listed in Special Condition 2.A. The plan shall be incorporated into Tyson Foods, Incorporated's Intermediate or Part 70 Operating Permit. The plan shall be available for review by any Missouri Department of Natural Resources' personnel upon request.

Page No.	4
Permit No.	
Project No.	2011-05-025

SPECIAL CONDITIONS:

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

- C. Tyson Foods, Incorporated shall record the monitoring parameters as specified in the plan developed according to Special Condition 2.B. at least once every 24 hours. The monitored parameters shall be maintained within design conditions specified in the plan.
 - D. Tyson Foods, Incorporated shall maintain an operating and maintenance log for the control equipment listed in Special Condition 2.A. 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.
 - E. Tyson Foods, Incorporated 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.
3. Aggregate Projects Condition
- A. Tyson Foods, Incorporated shall determine if the potential emissions from this project should be included with any construction permit applications submitted for this installation (159-0037) within the two years following the effective date of this permit.
 - B. Tyson Foods, Incorporated shall provide a written discussion of the results of the determination required by Special Condition 3.A. with any application submitted within the two years following the effective date of this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2011-05-025
Installation ID Number: 159-0037
Permit Number:

Tyson Foods, Incorporated
19571 Whitfield Road
Sedalia, MO 65302

Complete: May 10, 2011

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

Pettis County, S22, T46N, R22W

REVIEW SUMMARY

- Tyson Foods, Incorporated has applied for authority to increase the capacity of the meat and fat rendering line with the addition of a hammermill and screen to the grinding room.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- A cyclone, venturi scrubber, and packed bed scrubber are being used to control the particulate emissions from the equipment 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 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 application for an amendment to the Intermediate Operating Permit is required within 90 days of equipment startup. As part of their amendment request, Tyson should re-calculate the existing potential emissions for the entire installation and request intermediate source limits for pollutants that exceed Title V major source levels.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Tyson Foods, Incorporated (Tyson) operates a chicken processing operation in Sedalia, Missouri. The operation includes the slaughterhouse, food preparation and packaging, a rendering plant, and a waste water treatment plant. Tyson has proposed to increase the slaughterhouse capacity by 25 percent which requires modifications to the rendering plant. Although Tyson has not proposed modifications to the slaughterhouse or food preparation areas at this time, they do expect the capacity increase to enable them to add new food preparation and packaging capabilities in the near future. As projects in the near future may be related to this project, a special condition of this permit is to determine if the potential emissions of this project should be included in the potential emissions of any project submitted in the two years following permit issuance.

The following permits have been issued to Tyson Foods, Incorporated from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
1095-017	De minimis Permit for Chicken Processing Plant
1095-017A	Amendment to change the daily PM10 limit to an annual limit
1097-029	Permit for Protein Conversion Operation
1097-029A	Correction Amendment for changes to emissions summary table
0798-037	De minimis Permit for 10 MMBtu Fluid Heater
0798-002	Temporary Permit 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
082005-012	Temporary Permit for two 800 Hp boilers
122005-010	De minimis Permit for a boiler and a meat meal cooker
062006-010	De minimis Permit for a meat meal grinder and screen (never installed)
092010-004	Temporary Permit for a 1000 Hp boiler

Tyson is a potential source of nuisance odors, and the Kansas City Regional Office has received numerous odor complaints. The facility has addressed this issue by establishing better lines of communication with its neighbors who now contact Tyson

directly with their odor concerns. When an odor complaint is received, they initiate a prompt investigation and respond with the results. As a result, the regional office has not received a complaint since 2009.

PROJECT DESCRIPTION

Tyson has proposed to increase the capacity of the rendering plant by installing an additional hammermill and rotex screen in the meat meal grinding room. These units were originally acquired for construction permit number 062006-010, but they were not installed at that time. The installation of the hammermill and screen will debottleneck the meat meal process, increasing the capacity to 4.05 tons dry meat meal per hour. Following this project, the capacity of the meat meal process will be constrained by the maximum design rate of the meat meal cooker which is 22.5 tons wet rendering material per hour. Although the feather meal operations are physically located in the same building, the feather meal processes operate independently and were not included in the project emissions.

The de-bottlenecked emission units upstream and downstream of the new hammermill and screen were included in the scope of the project. Upstream emission units include all equipment up to the wet rendering material receiving. Downstream emission units include all equipment down to the dry meat meal load-out. All emission units considered for this review are listed in Table 3 below.

Table 3: Emission Unit Summary

ID	Description
EU55-A	Storage Bin
EU55-B	Hammermill
EU55-C	Rotex Screen
EU55-D	Hammermill
EU55-E	Rotex Screen
EU55-F	Weigh Bin Blender
EU61-A	Storage Bin
EU61-B	Truck Load Out
EU62	Paved Haul Roads (0.34 miles at the slaughterhouse, 0.17 miles at the rendering plant)

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 "Grain Elevators & Processes" (May 2003). Guidance for estimating emission factors for PM_{2.5} and PM₁₀ was obtained from the EPA document entitled, *Emission Factor Documentation for AP-42 Section 9.9.1 Grain Elevators and Grain Processing Plants Final Report* (April 2003). According to this background document, emission factors may be estimated assuming particulate matter ten microns or less in diameter (PM₁₀) is 50 percent of total particulate and particulate matter 2.5 microns or less in diameter (PM_{2.5}) is 17 percent of PM₁₀. Emissions from the haul roads were calculated according the procedures in AP-42, Section 13.2.1

“Paved Roads” (January, 2011). Potential emissions from the haul roads were calculated using a silt loading of 9.7 grams per square meter which is considered conservative. Tyson should be aware that the EPA strongly recommends site-specific silt load testing for calculating potential emissions from haul roads.

The emission units located inside the grinding room are exhausted through the following control devices operating in series: a 4,000 (4k) cfm cyclone, a 10k cfm venturi scrubber, and a 75k cfm packed bed scrubber. The packed tower scrubber water and reagents to oxidize odor causing compounds. Although the primary purpose of these control devices is to remove odor producing compounds from the exhaust stream, they have a secondary benefit of also removing particulate matter. The applicant proposed the control efficiency for this pollution control train of 95 percent removal of PM₁₀ and PM_{2.5}.

Potential emissions of the de-bottlenecked equipment were calculated at the potential-to-emit for the de-bottlenecked design rate. Although the project emissions for the de-bottlenecked units could have been calculated using a potential minus actual approach, the difference would not affect the outcome of the permit. Potential emissions of the application represent the potential of the new equipment and the de-bottlenecked equipment, assuming continuous operation (8,760 hours per year). The following table provides an emissions summary for this project.

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ^[1,2]	Existing Actual Emissions (EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM _{2.5}	10.0	N/D	2.18	0.60	N/A
PM ₁₀	15.0	109.09	19.86	2.53	N/A
SO _x	40.0	1.88	0.25	N/A	N/A
NO _x ^[3]	40.0	<215.75	41.83	N/A	N/A
VOC	40.0	14.64	2.94	N/A	N/A
CO	100.0	84.67	35.14	N/A	N/A
HAPs	10.0/25.0	0.57	N/D	N/A	N/A

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

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

²Existing potential emissions were calculated based on the following permits: 1095-017, 1097-029A, 0798-037, 1198-014, 0799-004, 052001-027, 102001-004, 122005-010, 062006-010. The potential emissions include limits found in previously issued construction permits, but do not include voluntary conditions accepted in the intermediate operating permit.

³Potential 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.

This construction permit supersedes two special conditions from previously issued construction permits. Special Condition 1 from permit number 122005-010 was removed because the facility no longer has two meat meal cookers making the condition unnecessary. Special Condition 1 from permit number 1198-014 was also removed because both the intent and the interpretation of the condition are not clear. Although

the condition may have been intended to limit the facility to less than Title V major source levels, it actually only requires that the facility comply with its operating permit.

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, Incorporated 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*
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of a hardcopy EIQ is required by April 1 for the previous year's emissions. Otherwise, submission of an electronic EIQ via MOEIS is required by May 1.
- *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*

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.

Kathi Jantz
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 2, 2011, received May 10, 2011, designating Tyson Foods, Incorporated as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated May 11, 2011.

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

RE: New Source Review Permit - Project Number: 2011-05-025

Dear Mr. McCauley:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 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 have any questions regarding this permit, please do not hesitate to contact Kathi Jantz, at the Department's 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

Kendall B. Hale
Permit Section Chief

KBH:kjl

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-05-025

Permit Number: