

# PERMIT BOOK

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: **052013-009**

Project Number: 2013-01-014  
Installation Number: 159-0035

Parent Company: Cargill Pork LLC

Parent Company Address: P.O. Box 699, Russellville, AR 72811

Installation Name: Cargill Pork - Smithton

Installation Address: 106 East Washington Street, Smithton, MO 65650

Location Information: Pettis County, S11, T45N, R20W

Application for Authority to Construct was made for:

Installation of a grain receiving pit, a receiving shed, an elevator leg, three grain storage bins, a six-hole automated distributor, and a grain roller mill. 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.

**MAY 20 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 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.”*

Cargill Pork - Smithton  
Pettis County, S11, T45N, R20W

1. **Superseding Condition**  
The conditions of this permit supersede all special conditions found in the previously issued construction permit 0697-017A issued by the Air Pollution Control Program. Permit number 0697-017A previously superseded all special conditions in the previously issued construction permits.
  
2. **PM<sub>10</sub> Emission Limitation**
  - A. Cargill Pork - Smithton shall emit less than 15.0 tons of PM<sub>10</sub> in any consecutive 12-month period from the entire installation as shown in Table 1.

Table 1: Emission Units and MHDR

Emission Unit	Description	Bottlenecked MHDR	Control Device
EU-01	Soft Ingredient Receiving	60.0 tons	None
EU-02	Grain Receiving	60.0 tons	None
EU-03	Roller Mill	33.0 tons	None
EU-04	Grain Storage Bin	60.0 tons	None
EU-05	Mixing Scale	60.0 tons	None
EU-06	Pellet Cooler	25.0 tons	Cyclone
EU-07	Feed Loadout	60.0 tons	None
EU-08	Boiler	16.67 MMBtu	None
EU-09	Haul Road	1.28 VMT	None
EU-10	Hammer Mill	20.0 tons	None
EU-11	Grain Handling	60.0 tons	None

- 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 1.A.
  
3. **Control Device Requirement-Cyclone**
  - A. Cargill Pork – Smithton shall control emissions from the pellet cooler (EU-06) using a cyclone as specified in the permit application.

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**SPECIAL CONDITIONS:**

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

- B. The cyclone shall be operated and maintained in accordance with the manufacturer's specifications.
- C. Cargill Pork - Smithton shall maintain an operating and maintenance log for the cyclone 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.
- 4. Record Keeping and Reporting Requirements
  - A. Cargill Pork - Smithton 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. Cargill Pork - Smithton 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: 2013-01-014  
Installation ID Number: 159-0035  
Permit Number:

Cargill Pork - Smithton  
106 East Washington Street  
Smithton, MO 65650

Complete: January 9, 2013

Parent Company:  
Cargill Pork LLC  
P.O. Box 699  
Russellville, AR 72811

Pettis County, S11, T45N, R20W

REVIEW SUMMARY

- Cargill Pork - Smithton has applied for authority to install a grain receiving pit, a receiving shed, an elevator leg, three grain storage bins, a six-hole automated distributor, and a grain roller mill.
- HAP emissions are expected from the natural gas combustion of the boiler (EU-08) but remain below the SMAL for all pollutants.
- 40 CFR 60 Subpart Dc, "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to this facility because the maximum heat input for the boiler (EU-08) is between 10 MMBtu/hr and 100 MMBtu/hr.
- 40 CFR 60 Subpart DD, "Standards of Performance for Grain Elevators" does not apply to this facility because the maximum grain storage at this facility does not exceed one million bushels.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A cyclone will be used to control particulate emissions associated with the pellet cooler.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM<sub>10</sub> are conditioned below de minimis levels. Potential emissions of PM are above the de minimis level but below the major source level.
- 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 for this review as no modeling standards currently exist for PM emissions.
- Emissions testing are not required for the equipment.
- A Basic Operating Permit application is required for this installation within 30 days of equipment start up.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

Cargill operates an animal feed manufacturing plant in Smithton, Missouri. The facility receives grain (corn, wheat, and milo) and soft ingredients (soy meal, wheat middlings, rice bran, meat, bone meal, salt, calcium, alimet and animal fat) by truck. The ingredients are then stored in storage bins until feed production begins. The alimet and animal fat will be stored in storage tanks. All grain received at this facility will be processed through the hammer mill (EU-10) or roller mill (EU-03). A hammer mill was previously permitted as EU-03 and a roller mill was previously permitted as EU-10 for this facility. However, the hammer mill and roller mill have since been taken out of operation by Cargill Pork – Smithton. The hammer mill (EU-10) and the roller mill (EU-03) are new pieces of equipment and therefore, not the same pieces of equipment that were permitted under permit number 0697-017A. In 2012, Cargill Pork - Smithton was notified that the replacement of the hammer mill (EU-03) and roller mill may have required a permit. Therefore, Cargill Pork – Smithton included this equipment within the application for this project. Cargill Pork – Smithton is required to apply for a Basic Operating Permit.

The following New Source Review permits have been issued to Cargill Pork - Smithton from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0697-017A	Permit Amendment
0697-017	Production Increase
1094-003	New Feed Facility

### PROJECT DESCRIPTION

Cargill Pork – Smithton has applied to construct a grain receiving pit, a receiving shed, an elevator leg, three grain storage bins, a six-hole automated distributor, and a grain roller mill (EU-03). This project also addresses a previously installed hammer mill and a three ton mixer scale at this facility. The emissions from the hammer mill (EU-10) were

included in the potential to emit and composite emission factor calculations. The existing grain storage bins will be removed because of structural issues. Two 36' diameter storage bins with a combined storage capacity of 102,594 bushels of grain and an 18' diameter storage bin with a storage capacity of 10,670 bushels of grain will replace the existing grain storage bins. The hammer mill (EU-10) has been previously installed at this facility. The original two ton per hour mixing scale (EU-05) has been replaced by a new three ton per hour mixing scale. The fan and duct work that vents air collected by the cyclone, controlling the pellet cooler (EU-06), will be replaced in order to allow the duct work to run vertically along the west side of the building. The mixing scale acts as the facility bottleneck of 60.0 tons per hour. After this project, Cargill Pork – Smithton will be capable of producing up to 60.0 tons of feed per hour. Emission control devices for this facility are shown in Table 1.

### 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, 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. Emissions associated with the combustion of natural gas in the boiler were calculated using AP-42, Section 1.4, *Natural Gas Combustion*, July 1998. The emission factor available for the pellet cooler with a high efficiency cyclone (EU-06) has already accounted for the control efficiency of the cyclone.

The following table provides an emissions summary for this project. Existing potential emissions were taken from construction permit number 0697-017. Existing actual emissions were taken from the installation's 2011 EIQ. Potential emissions of the application represent the potential of the entire facility, assuming continuous operation (8760 hours per year). Cargill Pork – Smithton expects most of the products delivered to the facility in hopper style trucks. The potential emissions are based on a conservative assumption that Cargill Pork – Smithton will receive 50% of its ingredients by straight trucks and the other 50% of ingredients will be received by hopper-style trucks.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Installation	New Installation Conditioned Potential
PM	25.0	N/D	N/A	266.16	40.12
PM <sub>10</sub>	15.0	<15.0	8.25	99.5	<15.0
PM <sub>2.5</sub>	10.0	N/D	0.063	16.65	2.51
SOx	40.0	N/D	0.005	0.04	N/A
NOx	40.0	3.8	0.83	7.16	N/A
VOC	40.0	N/A	0.04	0.39	N/A
CO	100.0	N/A	0.70	6.01	N/A
GHG (CO <sub>2</sub> e)	100,000	N/A	N/A	8,642	N/A
HAPs	10.0/25.0	N/A	N/A	0.14	N/A

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 PM<sub>10</sub> are conditioned below de minimis levels. Potential emissions of PM are above the de minimis level but below the major source level.

## APPLICABLE REQUIREMENTS

Cargill Pork - Smithton 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
- *Operating Permits*, 10 CSR 10-6.065

### SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *New Source Performance Regulations*, 10 CSR 10-6.070
  - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, 40 CFR Part 60, Subpart Dc applies to this facility.
- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-6.405

## 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.

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J Luebbert  
New Source Review Unit

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 7, 2013, received January 7, 2013, designating Cargill Pork LLC 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

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	
<b>CFR</b> .....	Code of Federal Regulations	.....	National Emissions Standards for Hazardous Air Pollutants
<b>CO</b> .....	carbon monoxide	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>NSR</b> .....	New Source Review
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM</b> .....	particulate matter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>ppm</b> .....	parts per million
<b>EP</b> .....	Emission Point	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EPA</b> .....	Environmental Protection Agency	<b>PTE</b> .....	potential to emit
<b>EU</b> .....	Emission Unit	<b>RACT</b> .....	Reasonable Available Control Technology
<b>fps</b> .....	feet per second	<b>RAL</b> .....	Risk Assessment Level
<b>ft</b> .....	feet	<b>SCC</b> .....	Source Classification Code
<b>GACT</b> .....	Generally Available Control Technology	<b>scfm</b> .....	standard cubic feet per minute
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Ms. Vicki Sena  
Plant Manager  
Cargill Pork - Smithton  
P.O. Box 699  
Russellville, AR 72811

RE: New Source Review Permit - Project Number: 2013-01-014

Dear Ms. Sena:

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 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: Kansas City Regional Office  
PAMS File: 2013-01-014

Permit Number: