

**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

**MISSOURI AIR CONSERVATION COMMISSION**

**PERMIT TO CONSTRUCT**

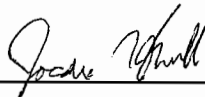
Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

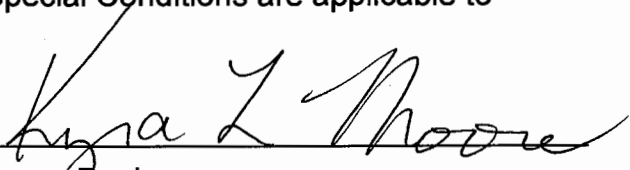
Permit Number: **01 2017 - 012**      Project Number: 2016-11-017  
Installation Number: 211-0014

Parent Company:              Smithfield Farmland Corp.  
Parent Company Address: 111 Commerce, Smithfield, VA 23430  
Installation Name:            Smithfield Farmland Corp. - Milan  
Installation Address:        22123 Highway 5, Milan, MO 63556  
Location Information:        Sullivan County, S 35, T 63 N, R 20W

Application for Authority to Construct was made for:  
Installing one 30 million BTU/ hr natural gas-fired hot water heater. 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.

  
Prepared by  
Jordan Hull  
New Source Review Unit

  
Director or Designee  
Department of Natural Resources

**JAN 24 2017**

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/>

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

Project Number: 2016-11-017  
Installation ID Number: 211-0014  
Permit Number: 012017-012

Installation Address:

Smithfield Farmland Corp- Milan  
22123 Highway 5  
Milan, MO 63556

Parent Company:

Smithfield Farmland Corp.  
111 Commerce  
Smithfield, VA 23430

Sullivan County, S 35, T 63 N, R 20W

REVIEW SUMMARY

- Smithfield Farmland Corp- Milan has applied for authority to install one 30 million BTU/hr. natural gas-fired hot water heater.
- The application was deemed complete on November 14, 2016.
- HAP emissions are expected from the proposed equipment. HAPs emitted from this project are from natural gas combustion.
- None of the NESHAPs or currently promulgated MACT regulations apply to the proposed equipment.
- New Source Performance Regulations, 40 CFR Part 60 Subpart Dc - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* applies to the hot water heater (EP-20).
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NO<sub>x</sub> are above insignificant levels, but remain below de minimis levels.
- This installation is located in Sullivan 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.

- 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.
- A modification to your facility's Basic Operating Permit is not required because this construction permit does not contain special conditions.
- Approval of this permit is recommended without special conditions.

### INSTALLATION DESCRIPTION

Smithfield Farmland Corp. - Milan is an existing installation that is a pork processing facility located in Milan, Missouri. They operate under a basic operating permit.

The following New Source Review permits have been issued to Smithfield Farmland Corp- Milan from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0394-014	Construct and operate pork processing plant with rendering capabilities. Same project number includes an amendment to this permit to account for hydrogen sulfide in the digester gas. Both projects show minor level of NOx emissions and de minimis levels of all other criteria pollutants.
0595-012	Switch alternative fuel source from natural gas to distillate fuel oil and increase boiler usage to allow operation of all three boilers. Construct two new distillate fuel oil storage tanks.
092007-008	Authority to Construct was made for (1) the addition of waste treatment capacity to allow for an increase in plant capacity; and (2) the option for construction of a flare to burn digester waste gas.

### PROJECT DESCRIPTION

Smithfield Farmland Corp. has applied for authority to install a natural gas-fired 30 million Btu/hr Hot Water Heater (EP-20). The new water heater system will be used to generate 140° F water. The facility uses 140° F water for facility sanitation purposes and house hot water for domestic use (laundry, cafeteria, hot water in restrooms, etc.).

### 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 1.4, "Natural Gas Combustion."

The following tables provide an emissions summary for this project. Existing potential emissions were taken from Construction Permit 092007-008 Existing actual emissions were taken from the installation's 2015 EIQ. Potential emissions of the Project

represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 2: Summary of Hourly Potential Emissions (pounds per hour)

Pollutant	Potential Emissions of the Project	Insignificant Levels
PM	0.22	N/A
PM <sub>10</sub>	0.22	1.00
PM <sub>2.5</sub>	0.22	N/A
SO <sub>x</sub>	0.02	2.75
NO <sub>x</sub>	2.94	2.75
VOC	0.16	2.75
CO	2.47	6.88
HAPs	0.06	0.05 or SMAL

Table 3: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2015 EIQ)	Potential Emissions of the Project
PM	25.0	N/D	N/D	0.98
PM <sub>10</sub>	15.0	20.88	1.41	0.98
PM <sub>2.5</sub>	10.0	N/D	1.35	0.98
SO <sub>x</sub>	40.0	14.26	0.51	0.08
NO <sub>x</sub>	40.0	76.47	18.77	12.88
VOC	40.0	10.39	1.42	0.71
CO	100.0	66.73	20.02	10.82
GHG (CO <sub>2</sub> e)	N/A	N/D	N/A	15,550.69
GHG (mass)	N/A	N/D	N/A	15,459.40
HAPs	10.0/25.0	N/D	N/A	0.24

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 all criteria pollutant are below de minimis levels. Potential emissions of NO<sub>x</sub> are above insignificant levels.

### APPLICABLE REQUIREMENTS

Smithfield Farmland Corp- Milan 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

- *Operating Permits*, 10 CSR 10-6.065
- *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 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 Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *New Source Performance Regulations*, 10 CSR 10-6.070
  - *Standards of Performance for Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc*

#### 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*, it is recommended that this permit be granted without special conditions.

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 24, 2016, received November 7, 2016, designating Smithfield Farmland Corp. as the owner and operator of the installation.

## 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>	National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EIQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SDS</b> .....	Safety Data Sheet
<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		



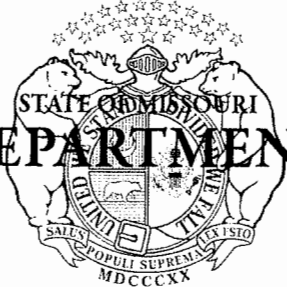
Emission Unit	Description	Installation's Designation	MHDR (MMBtu/hr input)	Combined MHDR (MMBtu/hr input)	MHDR (MMcf/hr)	Pollutant	CAS	HAP?	Emission Factor (lb / mmcf)	Emission Factor Source (SCC)	Available Pollutant (lb/hr)	Control Device	PTE (lb/hr)	PTE (tpy)
			30.0	30.00	0.029	PM filterable			1.9		0.0559	none	0.0559	0.24
						PM10			7.6		0.2235	none	0.2235	0.98
						PM2.5			7.6		0.2235	none	0.2235	0.98
						SOx			0.6		0.0176	none	0.0176	0.08
						NOx			100		2.9412	none	2.9412	12.88
						VOC			5.5		0.1618	none	0.1618	0.71
						CO			84		2.4706	none	2.4706	10.82
						Combined HAPs			1.888		0.0555	none	0.0555	0.24
						POM aggregate group			6.98E-04		2.05E-05	none	2.05E-05	8.99E-05
						2-Methylnaphthalene	91-57-6	y	2.40E-05		7.059E-07	none	7.06E-07	3.09E-06
						3-Methylchloranthrene	56-49-5	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						7,12-Dimethylbenzanthracene	57-97-6	y	1.60E-05		4.706E-07	none	4.71E-07	2.06E-06
						Acenaphthene	83-32-9	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						Acenaphthylene	203-96-8	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						Anthracene	120-12-7	y	2.40E-06		7.059E-08	none	7.06E-08	3.09E-07
						Benanthracene	56-55-3	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						Benzene	71-43-2	y	2.10E-03		6.176E-05	none	6.18E-05	2.71E-04
						Benzo(a)pyrene	50-32-8	y	1.20E-06		3.529E-08	none	3.53E-08	1.55E-07
						Benzo(b)fluoranthene	205-99-2	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						Benzo(g,h,i)perylene	191-24-2	y	1.20E-06		3.529E-08	none	3.53E-08	1.55E-07
						Benzo(k)fluoranthene	205-82-3	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						Butane	106-97-8		2.10E+00		6.176E-02	none	6.18E-02	2.71E-01
						Chrysene	218-01-9	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						Dibenzo(a,h)anthracene	53-70-3	y	1.20E-06		3.529E-08	none	3.53E-08	1.55E-07
						Dichlorobenzene	25321-22-6	y	1.20E-03		3.529E-05	none	3.53E-05	1.55E-04
						Ethane	74-84-0		3.10E+00		9.118E-02	none	9.12E-02	3.99E-01
						Fluoranthene	208-44-0	y	3.00E-06		8.824E-08	none	8.82E-08	3.86E-07
						Fluorene	86-73-7	y	2.80E-06		8.235E-08	none	8.24E-08	3.61E-07
						Formaldehyde	50-00-0	y	7.50E-02		2.206E-03	none	2.21E-03	9.66E-03
						Hexane	110-54-3	y	1.80E+00		5.294E-02	none	0.0529	0.23
						Indeno(1,2,3-cd)pyrene	193-39-5	y	1.80E-06		5.294E-08	none	5.29E-08	2.32E-07
						Naphthalene	91-20-3	y	6.10E-04		1.794E-05	none	1.79E-05	7.86E-05
						Pentane	109-66-0		2.60E+00		7.647E-02	none	7.65E-02	3.35E-01
						Phenanathrene	85-01-8	y	1.70E-05		5.000E-07	none	5.00E-07	2.19E-06
						Propane	74-98-6		1.60E+00		4.706E-02	none	4.71E-02	2.06E-01
						Pyrene	129-00-0	y	5.00E-06		1.471E-07	none	1.47E-07	6.44E-07
						Toluene	108-88-3	y	3.40E-03		1.000E-04	none	1.00E-04	4.38E-04
						Arsenic	7440-38-2	y	2.00E-04		5.882E-06	none	5.88E-06	2.58E-05
						Barium	7440-39-3		4.40E-03		1.294E-04	none	1.29E-04	5.67E-04
						Beryllium	7440-41-7	y	1.20E-05		3.529E-07	none	3.53E-07	1.55E-06
						Cadmium	7440-43-9	y	1.10E-03		3.235E-05	none	3.24E-05	1.42E-04
						Chromium	7440-47-3	y	1.40E-03		4.118E-05	none	4.12E-05	1.80E-04
						Cobalt	7440-48-4	y	8.40E-05		2.471E-06	none	2.47E-06	1.08E-05
						Copper	7440-50-8		8.50E-04		2.500E-05	none	2.50E-05	1.10E-04
						Manganese	7439-96-5	y	3.80E-04		1.118E-05	none	1.12E-05	4.90E-05
						Mercury	7439-97-6	y	2.60E-04		7.647E-06	none	7.65E-06	3.35E-05
						Molybdenum	7439-98-7		1.10E-03		3.235E-05	none	3.24E-05	1.42E-04
						Nickel	7440-02-0	y	2.10E-03		6.176E-05	none	6.18E-05	2.71E-04
						Selenium	7782-49-2	y	2.40E-05		7.059E-07	none	7.06E-07	3.09E-06
						Vanadium	7440-62-2		2.30E-03		6.765E-05	none	6.76E-05	2.96E-04
						Zinc	7440-66-6		2.90E-02		8.529E-04	none	8.53E-04	3.74E-03
						CO2			120,000		3529.4118	none	3529.412	15,458.82
						Methane			2.3		0.0676	none	0.0676	0.30
						N2O			2.2		0.0647	none	0.0647	0.28
						GHG (mass)								15,459.403
						GHG (CO2e)								15,550.69

Natural Gas HHV (Btu/cf)  
1,020

100yr GWP 40 CFR 98  
Table A-1, Jan 1 2014

CO2	1
CH4	25
N2O	298

Natural gas HHV of 1,020 Btu/cf cited from AP-42 Section 1.4, July 1998.  
Dichlorobenzene group CAS 25321-22-6 conservatively assumed as 100% 1,4-dichlorobenzene CAS 106-46-7.  
HAPs updated per "Air Pollution Control Program Table of Hazardous Air Pollutants, Screening Model Action Levels, and Risk Assessment Levels" Revision 10, 5/3/2012



Eric R. Greitens, Governor • Carol S. Comer, Acting Director

# DEPARTMENT OF NATURAL RESOURCES

dnr.mo.gov

**JAN 24 2017**

Mr. Mike Keith  
Plant Environmental Manager  
Smithfield Farmland Corp- Milan  
22123 Highway 5  
Milan, MO 63556

RE: New Source Review Permit - Project Number: 2016-11-017

Dear Mr. Keith:

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, 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.

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](http://www.oa.mo.gov/ahc).

Mr. Mike Keith  
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If you have any questions regarding this permit, please do not hesitate to contact Jordan Hull, 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:jhj

Enclosures

c: Northeast Regional Office  
PAMS File: 2016-11-017

Permit Number: **01 2 0 1 7 - 0 1 2**