

**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: **052013-007**      Project Number: 2012-09-056  
 Installation Number: 097-0171

Parent Company:              Blue Buffalo Company

Parent Company Address: 11 River Road, Wilton, CT 06897

Installation Name:              Heartland Pet Foods Manufacturing, Inc.

Installation Address:          8101 East 32nd Street, Joplin, MO 64801

Location Information:          Jasper County, S14, T27N, R32W

Application for Authority to Construct was made for:  
 Construction of a new pet food manufacturing plant. 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 14 2013**

\_\_\_\_\_  
 EFFECTIVE DATE

*Kyra L 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.

Page No.	3
Permit No.	
Project No.	2012-09-056

**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."*

Heartland Pet Foods Manufacturing, Inc.  
Jasper County, S14, T 27N, R 32W

1. Control Device Requirement-Baghouse
  - A. Heartland Pet Foods Manufacturing, Inc. shall control emissions from the equipment in Table 1 using baghouses as specified in the permit application.

**Table 1: Equipment Requiring Baghouse Control**

Emission Point	Emission Unit	Description
EP-01	EU-1	Pneumatic Truck Unloading
EP-02	EU-2	Pneumatic Truck Unloading
EP-03	EU-3	Pneumatic Truck Unloading
EP-06	EU-6	Pre-grind Hammer mill
EP-07	EU-7a	Super Sack Unloader 1
	EU-7b	Super Sack Unloader 2
	EU-7c	Micro-ingredient Storage Bin
EP-08	EU-8	Micro-ingredient Mixing
EP-09	EU-9	Hammer mill
EP-10	EU-10	Hammer mill
EP-11	EU-11	Hammer mill
EP-18	EU-18	Dryer Fines Collection 1
EP-19	EU-19	Dryer Fines Collection 2
EP-20	EU-20	Dryer Fines Collection 3
EP-25	EU-25	Finish Product Fines Collection 1
EP-26	EU-26	Finish Product Fines Collection 2
EP-27	EU-27	Finish Product Fines Collection 3

- B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse 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 the Department of Natural Resources' employees may easily observe them.
- C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions

Page No.	4
Permit No.	
Project No.	2012-09-056

**SPECIAL CONDITIONS:**

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

expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

- D. Heartland Pet Foods Manufacturing, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
  - E. Heartland Pet Foods Manufacturing, Inc. shall maintain an operating and maintenance log for the baghouses 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. Control Device Requirement – High Efficiency Cyclone
- A. The high efficiency cyclones must be in use at all times when the emission points listed in Table 2 are in operation. The high efficiency cyclones shall be operated and maintained in accordance with the manufacturer's specifications. The cyclones shall be equipped with a gauge or meter, which indicates the pressure drop across the control device.

**Table 2: Equipment Requiring Cyclone Control**

Emission Unit	Description
EU-12	Wet Pickup from Pneumatic Transfer 1
EU-13	Wet Pickup from Pneumatic Transfer 2
EU-14	Wet Pickup from Pneumatic Transfer 3
EU-15	Dryer 1
EU-16	Dryer 2
EU-17	Dryer 3
EU-21	Coating/Cooling 1
EU-22	Coating/Cooling 2
EU-23	Coating/Cooling 3

- B. Heartland Pet Foods Manufacturing, Inc. shall maintain an operating and maintenance log for the cyclones 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.

Page No.	5
Permit No.	
Project No.	2012-09-056

### SPECIAL CONDITIONS:

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

- 3) Heartland Pet Foods Manufacturing, Inc. shall monitor and record the operating pressure drop across the cyclones at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty and the range developed in the initial stack testing for Special Condition 3.B.
3. Stack Testing Requirements – Cyclones
- A. Heartland Pet Foods Manufacturing, Inc. shall conduct initial stack performance testing on the coating/cooler cyclones (EU-21, EU-22, EU-23) to verify the emission rate of the units as shown in Table 3. The sampling location shall be downstream of each cyclone's exhaust connections. The following process conditions shall be measured and recorded during the cyclone performance test.
    - 1) The cyclone filterable PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emission rate in pounds (to the hundredths decimal) per hour (lb/hr).
    - 2) The cyclone condensable particulate matter emission rate in pounds (to the ten-thousandths decimal) per hour (lb/hr).
    - 3) The cyclone pressure drop in inches of water column.
    - 4) The production rate used for each cyclone during testing.
  - B. These tests shall be performed within 60 days after achieving the maximum production rate of the installation, but not later than 180 days after initial start-up for commercial operation and shall be conducted at the MHDR stated in the permit application or within 10% of the value stated in the permit application in accordance with the Stack Test Procedures outlined in Special Condition 3.A
  - C. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
  - D. Two copies of a written report of the performance test results shall be submitted to the Director within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, complete sample calculations from

Page No.	6
Permit No.	
Project No.	2012-09-056

**SPECIAL CONDITIONS:**

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

the required U.S. EPA Method for at least one sample run, and establish corresponding ranges/limits for operating parameters to be used in Special Condition 2.B.3.

- E. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.
- F. If the results of the performance testing show that the tested emission rates are greater than the stack emission rates shown in Table 3, then Heartland Pet Foods Manufacturing, Inc. shall evaluate what effects these higher emission rates would have had on the permit applicability, modeling applicability, and emission factors for compliance and emission inventory. Heartland Pet Foods Manufacturing, Inc. shall submit to the Air Pollution Control Program the results of any such evaluation in a completed Application for Authority to Construct within 30 days of submitting the Performance Test Results report required in Special Condition 3.D. of this permit.

**Table 3: Proposed Cyclone Emission Rates**

Emission Unit	Description	MHDR (tph)	Controlled PM Emission Rates (lb/hr)	Controlled PM <sub>10</sub> Emission Rates (lb/hr)	Controlled PM <sub>2.5</sub> Emission Rates (lb/hr)
EU-21	Coating/cooling Cyclone	14.5	8.7	0.2175	0.2175
EU-22	Coating/cooling Cyclone	14.5	8.7	0.2175	0.2175
EU-23	Coating/cooling Cyclone	10	6.0	0.15	0.15

- 4. **Emergency Generator Requirements**
  - A. The individual operating hours of the emergency generator (EU-30) shall not exceed 500 hours annually. The emergency generator shall be equipped with a non-resettable running time meter. The emergency generator shall only be operated during emergencies to provide back-up power when electric power from public utilities is interrupted, for demand response, and for maintenance and testing.
  - B. Heartland Pet Foods Manufacturing, Inc. shall combust only diesel fuel 1&2 (ASTM D975) in the emergency generator (EU-30).

Page No.	7
Permit No.	
Project No.	2012-09-056

**SPECIAL CONDITIONS:**

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

- C. Diesel fuel shall not exceed 0.0015% weight sulfur (15 parts per million weight).
  - D. Heartland Pet Foods Manufacturing, Inc. shall obtain records from the fuel supplier for the diesel fuel shipment that show sulfur content in weight percent or parts per million.
5. Record Keeping and Reporting Requirements
- A. Heartland Pet Foods Manufacturing, 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.
  - B. Heartland Pet Foods Manufacturing, Inc. 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 shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2012-09-056  
Installation ID Number: 097-0171  
Permit Number:

Heartland Pet Foods Manufacturing, Inc.  
8101 East 32nd Street  
Joplin, MO 64801

Complete: September 18, 2012

Parent Company:  
Blue Buffalo Company  
11 River Road  
Wilton, CT 06897

Jasper County, S14, T 27N, R 32W

REVIEW SUMMARY

- Heartland Pet Foods Manufacturing, Inc. has applied for authority to construct a new pet food manufacturing facility and the associated equipment.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this project are products of natural gas combustion.
- NSPS 40 CFR Part 60 Subpart Dc: *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* applies to this facility because the boilers exceed 10MMBtu/hr heat input.
- NSPS 40 CFR Part 60 Subpart IIII: *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* applies to the emergency generator located at this site.
- MACT 40 CFR Part 63 Subpart ZZZZ: *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* applies to your facility because of the emergency generator on site. The emergency generator is considered a reciprocating internal combustion engine. You must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.
- NESHAP 40 CFR Part 63 Subpart JJJJJJ: *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* does not apply to this project because the boilers are gas fired.
- Building enclosure, baghouse, cyclone, storage bin vents, and fabric filters are being used to control the particulate emissions from the equipment in this permit.

- 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 are above the de minimis level but below the major source level.
- This installation is located in Jasper 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 because modeling standards do not currently exist for PM.
- Emissions testing is required for the coating/cooling cyclones (EU-21, EU-22, EU-23) as stated in Special Condition 3.
- A Basic Operating Permit is required for this facility within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION/PROJECT DESCRIPTION

Heartland Pet Foods Manufacturing, Inc. (herein referred to as Heartland), a subsidiary of Blue Buffalo Company, has proposed construction of a new facility located in Jasper County. The facility will be located in the city of Joplin, Missouri. The facility will include material handling operations, manufacturing processes, product packaging and loadout facilities. The facility also includes emissions from natural gas combustion provided by three dryers and two boilers. A diesel-fired emergency generator will also be on site. Bulk ingredients include dry bulk ingredients, liquid ingredients and frozen meat. Heartland will receive product using hopper trucks, straight trucks, and pneumatic trucks. Heartland will receive bulk ingredients, process them into fine particles, pelletize the mixture of ingredients, and dry the finished product. Equipment associated with the Heartland facility as well as the respective MHDR can be found in Table 4.

No permits have been issued to Heartland Pet Foods Manufacturing, Inc. from the Air Pollution Control Program.

Table 4: Heartland Project Equipment

Emission Unit	Description	MHDR (tph)	Bottlenecked MHDR (tph)
FS-1a	Hopper Truck Unloading 1	80	39
FS-1b	Hopper Truck Unloading 2	80	39
EU-1	Pneumatic Truck Unloading 1*	80	39*
EU-2	Pneumatic Truck Unloading 2*	80	39*
EU-3	Pneumatic Truck Unloading 3*	80	39*
EU-4	Storage Bins (8)	80	39
EU-5	Conveyor	240	39
EU-6	Pre-grind Hammer mill	8	8
EU-7a	Super Sack Unloader 1	12	12
EU-7b	Super Sack Unloader 2	12	12
EU-7c	Micro-ingredient Storage	24	24
EU-8	Micro-ingredient Mixing	39	39
EU-9	Hammer mill	14.5	14.5
EU-10	Hammer mill	14.5	14.5
EU-11	Hammer mill	10	10
EU-12	Wet Pickup from Pneumatic Transfer 1	14.5	14.5
EU-13	Wet Pickup from Pneumatic Transfer 2	14.5	14.5
EU-14	Wet Pickup from Pneumatic Transfer 3	10	10
EU-15	Dryer 1	14.5	14.5
EU-16	Dryer 2	14.5	14.5
EU-17	Dryer 3	10	10
EU-18	Dryer Fines Collector 1	14.5	14.5
EU-19	Dryer Fines Collector 2	14.5	14.5
EU-20	Dryer Fines Collector 3	10	10
EU-21	Coating/Cooling 1	14.5	14.5
EU-22	Coating/Cooling 2	14.5	14.5
EU-23	Coating/Cooling 3	10	10
EU-24	Finished Product Storage Bin	39	39
EU-25	Finish Product Fines Collection 1	0.5	0.5
EU-26	Finish Product Fines Collection 2	0.5	0.5
EU-27	Finish Product Fines Collection 3	30	30
EU-28	Boiler 1	13.39 MMBtu/hr	13.39 MMBtu/hr
EU-29	Boiler 2	13.39 MMBtu/hr	13.39 MMBtu/hr
EU-30	Emergency Generator	2.03 MMBtu/hr	2.03 MMBtu/hr
FS-2	Haul Roads	0.18 VMT/hr	0.18 VMT/hr

\* = All pneumatic unloading is routed to the baghouse through the same system. Therefore, pneumatic unloading is limited to one emission unit at any given time.

## EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the following sections of EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition:

- Section 1.4 *Natural Gas Combustion*, July 1998.
- Section 3.3 *Gasoline and Diesel Industrial Engines*, October 1996.
- Section 9.9.1 *Grain Elevators and Processes*, May 2003
- Section 13.2.2 *Unpaved Haul Roads*, November 2006

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). All pneumatic unloading is routed to the baghouse through the same system. Therefore, pneumatic unloading emissions are limited to one emission point at any given time. Emissions from the emergency generator are based on a yearly operating time equal to 500 hours. Existing potential emissions are not available as Heartland Pet Foods will be a new facility. Emissions calculations are based on the controlled PTE of the equipment associated with the production of pet food. Emissions from the coating/cooler cyclones were calculated using the emission factor provided by Heartland. An initial stack test is required for the three cyclones (EP-21, EP-22, EP-23) in order to confirm the proposed controlled emission factors for PM, PM<sub>10</sub>, and PM<sub>2.5</sub>. Table 5 contains the emissions summary for the project. AP-42 contained emission factors for PM emissions associated with the hammer mills, with suggestions for calculating PM<sub>10</sub>. In order to remain conservative, all PM<sub>10</sub> emissions associated with these processes are assumed to be PM<sub>2.5</sub>.

Table 5: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Controlled Potential Emissions of the Application	Uncontrolled Potential Emissions of the Application
PM	25.0	N/A	136.6	202.2
PM <sub>10</sub>	15.0	N/A	14.94	36.94
PM <sub>2.5</sub>	10.0	N/A	9.74	12.24
SOx	40.0	N/A	0.185	0.185
NOx	40.0	N/A	32.5	32.5
VOC	40.0	N/A	1.73	1.73
CO	100.0	N/A	28.0	28.0
GHG (CO <sub>2</sub> e)	100,000	N/A	37,194.8	37,194.8
GHG (mass)	250.0	N/A	36,971.5	36,971.5
HAPs	10.0/25.0	N/A	0.581	0.581

N/A = Not Applicable

Potential emissions of PM are above de minimis levels but below major source levels. Table 6 contains the control devices and the associated control efficiencies that will control emissions from the installation. The control efficiency of the hammer mills vented to a baghouse have already been included within the emission factor. Baghouse PM<sub>10</sub> control efficiency of 99.5% was approved based on the manufacturer's data sheets submitted by Heartland. Cyclone control efficiencies were obtained from manufacturer's specifications submitted by Heartland.

Table 6: Control Devices and Control Efficiencies

Emission Point	Control Device	PM <sub>2.5</sub> Control Efficiency (%)	PM <sub>10</sub> Control Efficiency (%)
FS-1a	Enclosure	1.5	3.7
FS-1b	Enclosure	1.5	3.7
EP-1	Baghouse	99.0	99.5
EP-2	Baghouse	99.0	99.5
EP-3	Baghouse	99.0	99.5
EP-4	Bin Vent	99.0	99.0
EP-5	Cartridge Fabric Filter	95.0	99.0
EP-6	Baghouse	Included in emission factor	Included in emission factor
EP-7a,b,c	Baghouse	99.0	99.5
EP-8	Baghouse	99.0	99.5
EP-9	Baghouse	Included in emission factor	Included in emission factor
EP-10	Baghouse	Included in emission factor	Included in emission factor
EP-11	Baghouse	Included in emission factor	Included in emission factor
EP-12	Cyclone	20.0	90.0
EP-13	Cyclone	20.0	90.0
EP-14	Cyclone	20.0	90.0
EP-15	Cyclone	39.1	66.6
EP-16	Cyclone	39.1	66.6
EP-17	Cyclone	38.4	66.1
EP-18	Baghouse	99.0	99.5
EP-19	Baghouse	99.0	99.5
EP-20	Baghouse	99.0	99.5
EP-21	Cyclone	Included in emission factor	Included in emission factor
EP-22	Cyclone	Included in emission factor	Included in emission factor
EP-23	Cyclone	Included in emission factor	Included in emission factor
EP-25	Baghouse	99.0	99.5
EP-26	Baghouse	99.0	99.5
EP-27	Baghouse	99.0	99.5

#### 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 are above the de minimis level but below the major source level.

## APPLICABLE REQUIREMENTS

Heartland Pet Foods Manufacturing, 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.

### 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 Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-6.405 NSPS 40 CFR Part 60 Subpart Dc: *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* applies to this facility because the boiler's heat input exceed 10MMBtu/hr heat input.
- NSPS 40 CFR Part 60 Subpart IIII: *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* applies to the emergency generator located at this site.
- NESHAP 40 CFR Part 63 Subpart ZZZZ: *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* applies to your facility because of the emergency generator on site. The emergency generator is considered a reciprocating internal combustion engine. You must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

## 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 September 14, 2012, received September 19, 2012, designating Blue Buffalo Company 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>	..... 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>EQ</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>scf</b> .....	standard cubic feet
<b>GACT</b> .....	Generally Available Control Technology	<b>SIC</b> .....	Standard Industrial Classification
<b>GHG</b> .....	Greenhouse Gas	<b>SIP</b> .....	State Implementation Plan
<b>gpm</b> .....	gallons per minute	<b>SMAL</b> .....	Screening Model Action Levels
<b>gr</b> .....	grains	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>HAP</b> .....	Hazardous Air Pollutant	<b>tph</b> .....	tons per hour
<b>hr</b> .....	hour	<b>tpy</b> .....	tons per year
<b>hp</b> .....	horsepower	<b>VMT</b> .....	vehicle miles traveled
<b>lb</b> .....	pound	<b>VOC</b> .....	Volatile Organic Compound
<b>lbs/hr</b> .....	pounds per hour		
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Mr. Terry Mustard  
Vice President of Engineering  
Heartland Pet Foods Manufacturing, Inc.  
11 River Road  
Wilton, CT 06897

RE: New Source Review Permit - Project Number: 2012-09-056

Dear Mr. Mustard:

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: Southwest Regional Office  
PAMS File: 2012-09-056

Permit Number: