

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: **052014-008** Project Number: 2013-12-003
Installation Number: 201-0101

Parent Company: Animal Health Center, Inc.
Parent Company Address: 508 North Main St., Sikeston, MO 63801
Installation Name: Animal Health Center, Inc.
Installation Address: 64 County Highway 538, Sikeston, MO 63801
Location Information: Scott County, S12, T26N, R14E

Application for Authority to Construct was made for:
Installation of a new Therm-Tec Model S-27-T animal crematory. 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.

MAY 22 2014

EFFECTIVE DATE

A handwritten signature in cursive script, reading "Kyma L. Brown".

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 startup 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 startup 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."

Animal Health Center, Inc.
Scott County, S12, T26N, R14E

1. Process Requirements for the Pet Crematory (EP-02)
 - A. Animal Health Center, Inc. will burn exclusively non-infectious animal carcasses or body parts (as defined in the Project Description) and containers which shall not contain chlorine.
 - B. Charging of waste during burn cycles is prohibited.
 - C. The crematory shall be equipped with a continuous chart recorder that monitors, displays and records the temperature in the final combustion chamber with an accuracy of two percent ($\pm 2\%$).
 - D. Animal Health Center, Inc. shall maintain the temperature in the final combustion chamber at or above 1400 degrees Fahrenheit.
 - E. Remains shall be incinerated at a rate not exceeding 75.0 pounds per hour.
 - F. Batch weight shall not exceed 450.0 pounds.
 - G. Animal Health Center, Inc. shall maintain an accurate record of the number of cremations and the total mass of remains cremated at this installation per month.
 - H. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.E, 1.F, and 1.G.
2. Opacity
The crematory (EP-02) shall have opacity of less than ten percent (10%) at all times.

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SPECIAL CONDITIONS:

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

3. Requirements for Operators of the Pet Crematory (EP-02)
 - A. All crematory operators shall attend a training program equivalent to that developed by the American Society of Mechanical Engineers (ASME), by the crematory manufacturer or by an individual with more than one (1) year experience in the operation of the crematory. The training shall include basic combustion theory, operating procedures, monitoring of combustion control parameters and all emergency procedures to be followed if the crematory should malfunction or exceed operating parameters.
 - B. The crematory operator shall have the essential steps necessary for satisfactory operation of the crematory readily available to him or her in an easy to read and follow manual.
4. Restriction of Emission of Odors

If a continued situation of verified nuisance odors exists in violation of 10 CSR 10-6.165, the Director may require through written notice that Animal Health Center, Inc. submit within ten days a corrective action plan adequate to timely and significantly mitigate the odors. Animal Health Center, Inc. shall implement any such plan immediately upon its approval by the Director. Failure to either submit or implement such a plan shall be in violation of this permit.
5. Record Keeping and Reporting Requirements
 - A. Animal Health Center, 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. These records shall include MSDS for all materials used.
 - B. Animal Health Center, 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 show an exceedance of a limitation imposed by this permit.

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

Project Number: 2013-12-003
Installation ID Number: 201-0101
Permit Number:

Animal Health Center, Inc.
64 County Highway 538
Sikeston, MO 63801

Complete: December 3, 2013

Parent Company:
Animal Health Center, Inc.
508 North Main St.
Sikeston, MO 63801

Scott County, S12, T26N, R14E

REVIEW SUMMARY

- Animal Health Center, Inc. has applied for authority to install a new Therm-Tec Model S-27-T animal crematory.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are products of the combustion of natural gas and animal remains.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs applies to this installation. None of the currently promulgated MACT regulations applies to the proposed equipment.
- An afterburner is being used to control the PM, VOC and CO 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 pollutants are de minimis.
- This installation is located in Scott 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 de minimis.

- Emissions testing is not required for the equipment.
- An amended Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Animal Health Center, Inc. is a veterinary clinic located in Sikeston, Missouri. They currently operate another animal incinerator, Shenandoah Model P16-2GN-T (EP-01) that was permitted January 24, 1997, Project# EX4440-0101-005. They have a Basic Operating Permit that expires December 18, 2016.

The following New Source Review permits have been issued to Animal Health Center, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
EX4440-0101-005	Animal Incinerator

PROJECT DESCRIPTION

Animal Health Center, Inc. is installing a Therm-Tec Model S-27-T animal incinerator (EP-02). The unit has a primary and secondary afterburner chamber which are fueled by natural gas. The pet crematory is a multiple chamber design and has a rated capacity of 75 pounds per hour. The pet crematory has a maximum batch size equal to 450 pounds. This incinerator was purchased from the city of Sikeston and Animal Health Center, Inc. will relocate it at a farm near Sikeston.

The crematory was required to submit stack test results to demonstrate compliance with the programs requirements for crematories. These requirements include that the crematory achieve a combustion efficiency of 99.9%, that the maximum particulate concentration in the crematory's stack gas is less than 0.09 grains per dry standard cubic feet and that the crematory's opacity does not exceed 10%. These requirements were developed to ensure proper combustion, which ensures destruction of HAPs.

The crematory is permitted to cremate non-infectious animal bodies and body parts. The Air Pollution Control Program's definition of this term is animal bodies and body parts that do not fit the definition of medical/infectious waste as defined in the Code of Federal Regulations, 40 CFR 60.51, *Standards of Performance for New Stationary Sources*, Subpart Ec—"Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996." The rule defines medical/infectious waste as:

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that are listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste

identified or listed under the regulations in part 261 of this chapter; household waste, as defined in §261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment; and domestic sewage materials identified in §261.4(a)(1) of this chapter.

- (1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.
- (2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.
- (3) Human blood and blood products including:
 - (i) Liquid waste human blood;
 - (ii) Products of blood;
 - (iii) Items saturated and/or dripping with human blood; or
 - (iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.
- (4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.
- (5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.
- (6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.
- (7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

EMISSIONS/CONTROLS EVALUATION

The emission rates for particulate matter less than ten (10) microns in aerodynamic diameter (PM₁₀) and carbon monoxide (CO) used in this review were obtained from a stack test performed on a Therm-Tec Model S-27 incinerator, January 22 & 23, 2002, in Sherwood, Oregon. This stack test was approved by the Air Pollution Control Program Testing and Emission Unit in a memo dated June 8, 2004 (Peter Yronwood). The Therm-Tec Model S-27-T is a top loading incinerator and that is the only difference from a Therm-Tec Model S-27. Emissions of sulfur oxides (SO_x), nitrogen oxides (NO_x) and volatile organic compound (VOC) emissions were calculated using emission factors from EPA's Factor Information Retrieval Data System (FIRE) SCC 5-02-001-01. The emission factors used in the analysis of HAP emissions were obtained from FIRE for SCC 3-15-021-01. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project. Existing potential emissions, for all pollutants were taken from permit number EX4440-0101-005; it could not be determined if HAPs emissions were not calculated or that their emissions were insignificant. Existing actual emissions were taken from the facility's 2013 EIQ. The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ¹	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Potential Emissions
PM	25.0	N/D	N/A	0.31	N/D
PM ₁₀	15.0	1.04	0.15	0.31	1.34
PM _{2.5}	10.0	N/D	0.15	0.31	N/D
SO _x	40.0	0.0	0.22	0.41	0.41
NO _x	40.0	0.53	1.0	0.49	1.02
VOC	40.0	1.75	0.01	0.49	2.24
CO	100.0	0.0	0.05	0.03	0.08
GHG (CO ₂ e) ²	75,000 / 100,000	N/D	N/A	N/D	N/D
GHG (mass)	0.0 / 100.0 / 250.0	N/D	N/A	722.91	N/D
HAPs	10.0/25.0	0.0	0.0	0.16	0.16

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

¹Existing emission were taken from Permit EX4440-0101-005

²GHGe was not calculated since the combustion of natural gas emits very little methane and the destruction rate of the afterburner is 99.99%. Therefore, the GHGe is insignificantly greater than GHGmass.

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

Animal Health Center, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

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.

Kathy Kolb
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 27, 2013, received December 3, 2013, designating Animal Health Center, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Factor Information Retrieval (FIRE)
- Stack test report on Therm-Tec Model S-27 in Sherwood, Oregon on January 22 & 23, 2002

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Dr. Steve Williams
President
Animal Health Center, Inc.
508 North Main St.
Sikeston, MO 63801

RE: New Source Review Permit - Project Number: 2013-12-003

Dear Dr. Williams:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended basic 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 Kathy Kolb, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone 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:kkk

Enclosures

c: Southeast Regional Office
PAMS File: 2013-12-003

Permit Number: