

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: 072012-003 Project Number: 2012-05-079

Parent Company: Stookey Pet Cremation Service, LLC

Parent Company Address: 5230 Northrup Avenue, St. Louis, MO 63110

Installation Name: Stookey Pet Cremation Service, LLC

Installation Number: 510-3005

Installation Address: 2731 Hereford Street, St. Louis, MO 63139

Location Information: St. Louis County, LG 2037

Application for Authority to Construct was made for: Installation of one Therm-Tec Model S-27-T animal incinerator. 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.

JUL 9 2012

EFFECTIVE DATE

Handwritten signature of Kyrna 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 Departments' Air Pollution Control Program of the anticipated date of startup 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 of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual startup of this (these) air contaminant source(s).

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 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 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."

Stookey Pet Cremation
St. Louis County, LG 2037

1. Process Requirements for the Pet Crematory (EP-01)
 - A. Stookey Pet Cremation will burn exclusively non-infectious animal carcasses or body parts (as defined in the Installation Description) and containers not containing chlorine.
 - B. Charging of waste between 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. Stookey Pet Cremation shall maintain the temperature in the final combustion chamber at or above 1,400 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 of remains.
 - G. Attachment A or a form approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.E and 1.F.
2. Opacity
The crematory (EP-01) shall have opacity of less than ten percent (10%) at all times.
3. Requirements for Operators of the Pet Crematory (EP-01)
 - 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 year experience in the operation of the crematory. The training shall include

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SPECIAL CONDITIONS:

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

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 Stookey Pet Cremation submit within ten days a corrective action plan adequate to timely and significantly mitigate the odors. Stookey Pet Cremation 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. Stookey Pet Cremation 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 Material Safety Data Sheets (MSDS) for all materials used.
 - B. Stookey Pet Cremation shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 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 (5) REVIEW

Project Number: 2012-05-079
Installation ID Number: 510-3005
Permit Number:

Stookey Pet Cremation
2731 Hereford Street
St. Louis, MO 63139

Complete: May 21, 2012

Parent Company:
Stookey Pet Cremation Service, LLC
5230 Northrup Avenue
St. Louis, MO 63110

St. Louis County, LG 2037

REVIEW SUMMARY

- Stookey Pet Cremation has applied for authority to install one Therm-Tec Model S-27-T animal incinerator.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment due to the combustion of natural gas and animal remains.
- None of the New Source Performance Standards (NSPS) 40 CFR 60, apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) 40 CFR 61, apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) 40 CFR 63, regulations apply to the proposed equipment.
- Afterburners installed by the manufacturer are being used in association with the new equipment, as control devices.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of criteria pollutants are below de minimis levels. Section (1)(B) requires all incinerators to obtain construction permits.
- This installation is located in St. Louis County, a nonattainment area for the eight-hour ozone standard and the particulate matter less than 2.5 microns in diameter (PM_{2.5}) standard and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing are not required for the equipment proposed in this project. Stack testing was conducted on a similar unit and approved by the Air Pollution Control Program.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup according to 10 CSR 10-6.065 Operating Permits (1)(B).
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Stookey Pet Cremation is located at 2731 Hereford Street in St. Louis, Missouri. No permits have been issued to Stookey Pet Cremation from the Air Pollution Control Program. All incinerators are required to obtain both a construction permit and an operating permit from the Air Pollution Control Program as mandated in 10 CSR 10-6.060 (1)(B) and 10 CSR 10-6.065 (1)(B). A basic operating permit is required for this installation.

PROJECT DESCRIPTION

Stookey Pet Cremation is installing a Therm-Tec Model S-27-T animal incinerator (EP-01). The unit has a primary and secondary/afterburner chamber and is fueled by natural gas.

The pet crematory is a multiple chamber design and has a rated capacity of 75 pounds per hour. Natural gas is used to power the unit and is equipped with a primary burner firing rate of 400,000 BTU per hour and a secondary burner firing rate of 450,000 BTU per hour.

Stack test requirements show that the crematory achieves a combustion efficiency of 99.9 percent, 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 ten percent. These requirements were developed to ensure proper combustion. The proposed crematory has met these requirements as shown in prior testing at other facilities using the same incinerator models.

The pet crematory is permitted to cremate non-infectious pet bodies and body parts. The Air Pollution Control Program's definition of this term is pet carcasses 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 or cremation; 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 include 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

For the pet/animal crematory, the emission rates for particulate matter less than 10 microns in diameter (PM₁₀) and carbon monoxide (CO) were obtained from the pet model stack test performed in Sherwood, OR on January 22nd and 23rd, 2002. Emissions of sulfur oxides (SO_x), nitrogen oxides (NO_x), and volatile organic compounds (VOC) were calculated using the emission factor from Factor Information Retrieval (FIRE) source classification code (SCC) 5-02-001-01. The hazardous air pollutants (HAPs) were calculated using FIRE SCC 3-15-021-01.

As this installation has not previously been reviewed by the Air Pollution Control Program, there are no existing potential or actual emissions. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year). The following table provides an emissions summary for this project.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	N/A	N/A	0.31	N/A
SO _x	40.0	N/A	N/A	0.41	N/A
NO _x	40.0	N/A	N/A	0.49	N/A
VOC	40.0	N/A	N/A	0.49	N/A
CO	100.0	N/A	N/A	0.03	N/A
HAPs	10.0/25.0	N/A	N/A	0.16	N/A

N/A = Not Applicable

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 criteria pollutants are below de minimis levels. Section (1)(B) requires all incinerators to obtain construction permits.

APPLICABLE REQUIREMENTS

Stookey Pet Cremation 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*
- *Control of Odors From Processing of Animal Matter, 10 CSR 10-5.170*

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.

Janelle Lewis
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 21, 2012, received May 21, 2012, designating Stookey Pet Cremation Service, LLC 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, OR on January 22 & 23, 2002

Mr. Ted Stookey
Owner
Stookey Pet Cremation
5230 Northrup Avenue
St. Louis, MO 63110

RE: New Source Review Permit - Project Number: 2012-05-079

Dear Mr. Stookey:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 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 Janelle Lewis, at the department's 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:jlk

Enclosures

c: St. Louis Regional Office
PAMS File: 2012-05-079

Permit Number: