



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: 012007 - 008 Project Number: 2006-10-024

Parent Company: Animal Care Service, Inc.

Parent Company Address: 1555 Hensley Lane, P.O. Box 447, Festus, MO 63028

Installation Name: Animal Care Service, Inc.

Installation Address: 1555 Hensley Lane, P.O. Box 447, Festus, MO 63028

Location Information: Jefferson County, S26, T41, R5

Application for Authority to Construct was made for:
Installation of a small animal crematory, Shenandoah C12-400. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JAN 16 2007

EFFECTIVE DATE


DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within 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 this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located with 15 days after the actual start up 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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| Permit No. | |
| Project No. | 2006-10-024 |

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 Care Service, Inc.
Jefferson County, S26, T41, R5

1. Process Requirements for the Animal Crematory (EP-06)
 - A. Animal Care Service, Inc. will burn exclusively non-infectious animal bodies or body parts not in containers and non-infectious animal bodies or body parts in containers not containing chlorine.
 - B. Charging of waste between burn cycles is prohibited in the batch-type incinerator.
 - C. The incinerator shall be equipped with a continuous chart recorder that is able to monitor, display and record the temperature in the final combustion chamber to an accuracy of plus or minus two percent (2%).
 - D. The incinerator shall have a minimum combustion efficiency of 99.9% determined from the carbon dioxide (CO₂) concentration divided by the sum of the carbon monoxide (CO) and CO₂ concentrations.
2. Record Keeping Requirements
Animal Care Service, Inc. shall maintain an accurate record of the monthly amount and type of waste combusted at this installation. The installation shall use Attachment A or other equivalent form(s) approved by the Air Pollution Control Program for this purpose. Animal Care Service, Inc. shall maintain records on-site for the most recent 60 months of all records required by this permit and shall immediately make such records available to any Missouri Department of Natural Resources' personnel upon verbal request.
3. Opacity
The incinerator shall have opacity of less than ten percent (10%) at all times.
4. Operator Requirements for Animal Crematories (EP-06)
 - A. All incinerator operators shall attend a training program equivalent to that developed by the American Society of Mechanical Engineers (ASME), by the incinerator manufacturer or by an individual with more than one (1) year experience in the operation of the incinerator. The training shall

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SPECIAL CONDITIONS:

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

include basic combustion theory, operating procedures, monitoring of combustion control parameters and all emergency procedures to be followed if the incinerator should malfunction or exceed operating parameters.

- B. The incinerator operator shall have the essential steps necessary for satisfactory operation of the incinerator readily available to him in an easy to read and follow manual.

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

Project Number: 2006-10-024
Installation ID Number: 099-0150
Permit Number:

Animal Care Service, Inc.
1555 Hensley Lane, P.O. Box 447
Festus, MO 63028

Complete: October 4, 2006
Reviewed: November 22, 2006

Parent Company:
Animal Care Service, Inc.
1555 Hensley Lane, P.O. Box 447
Festus, MO 63028

Jefferson County, S26, T41, R5

REVIEW SUMMARY

- Animal Care Service, Inc. has applied for authority to install a small animal crematory, Shenandoah C12-400 (EP-06).
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment, but in insignificant amounts.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- 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*. All incinerators are required to obtain a permit from the Air Pollution Control Program as mandated in 10 CSR 10-6.060. Potential emissions are less than de minimis levels.
- This installation is located in Jefferson County, a nonattainment area for ozone (O₃) and an attainment area for all other criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was not performed since potential emissions of the

application are below de minimis levels.

- Emissions testing is not required for the equipment. Stack testing was conducted on similar units and approved by the Air Pollution Control Program.
- A 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 Care Service, Incorporated has applied for the authority to construct a liquefied propane gas fired incinerator. This incinerator, Shenandoah C12-400, will be used to incinerate animals from veterinary clinics, humane societies, and city or county animal shelters.

A Basic Operating Permit was issued by the Air Pollution Control Program on September 10, 2003 (Project Number 2003-07-072). In addition, a Basic Operating Permit amendment was received on February 8, 2006 and a Basic Operating Permit application was received on October 4, 2006 and are currently undergoing technical review.

The following permits have been issued to Animal Care Service, Inc. from the Air Pollution Control Program.

Table 1: Previously Issued New Source Review Permits

| Permit Number | Description |
|---------------|--|
| 032002-014 | A Section (5) permit for the authority to install a Therm-Tec Model G-30-P animal incinerator. |
| 012003-013 | A Section (5) permit for the authority to install one Shenandoah Model C6 and one Therm-Tec Model G-12-P-1 animal incinerator. |
| 092003-001 | A Section (5) permit for the authority to install a Therm-Tec Model G-30-P animal incinerator. |
| 042006-011 | A Section (5) permit for the authority to install a Therm-Tec Model G-30-P animal incinerator. |

PROJECT DESCRIPTION

The Shenandoah C12-400 incinerator is fired by liquefied propane gas and is capable of charging 80 pounds of carcasses per hour. A performance test on the same size unit was conducted on July 19, 1996 at the Boone Iowa Humane Society in Boone, Iowa and was previously approved by the Air Pollution Control Program.

Due to the nature of pathological waste incineration, metal emissions may be present, such as antimony, lead, mercury and cadmium. However, these emissions should be small enough to be considered insignificant.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this review for particulate matter less than 10 microns (PM₁₀) were obtained from the aforementioned stack test. The emission factors for sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compounds (VOCs) emissions was obtained from the Factor Information Retrieval (FIRE) Data System Version 6.24 for SCC 5-02-001-01 and compared to the emission factors from liquefied propane gas combustion which were obtained from the U.S. Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Section 1.5, *Liquefied Petroleum Gas Combustion*. The emission factors that resulted in the highest emissions for SO_x, NO_x, CO and VOCs emissions were then used. The emission factor used in the analysis of HAP emissions was obtained from the Factor Information Retrieval (FIRE) Data System Version 6.24 for SCC 3-15-021-01. The composite emission factor of HAPs listed in FIRE was 0.076 pounds of HAP per body cremated and it was assumed that one body could be cremated per hour. No pollution control equipment is in use with this process.

Table 2 gives an emissions summary for the potential emissions from the incinerator. Potential emissions were calculated based on the maximum hourly design rate of the incinerator (80 pounds per hour, 0.73 MMBtu per hour) operating at 8,760 hours annually. Existing potential emissions were taken from permit number 042006-011. Existing actual emissions were taken from the installation's 2005 Emission Inventory Questionnaire (EIQ).

Table 2: Emissions Summary (tons per year)

| Pollutant | Regulatory De Minimis Levels | Existing Potential Emissions | Existing Actual Emissions (2005 EIQ) | Potential Emissions of the Application | New Installation Conditioned Potential |
|------------------|------------------------------|------------------------------|--------------------------------------|--|--|
| PM ₁₀ | 15.0 | 5.69 | 0.91 | 0.13 | N/A |
| SO _x | 40.0 | 41.61 | 1.32 | 2.94 | N/A |
| NO _x | 40.0 | 14.02 | 1.59 | 0.53 | N/A |
| VOC | 40.0 | 11.23 | 1.59 | 0.53 | N/A |
| CO | 100.0 | 5.52 | 0.21 | 1.75 | N/A |
| HAPs | 10.0/25.0 | N/D | N/D | 0.67 | N/A |

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*. All incinerators are required to obtain a permit from the Air Pollution Control Program as mandated in 10 CSR 10-6.060. Potential emissions are less than de minimis levels.

APPLICABLE REQUIREMENTS

Animal Care Service, 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*
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.
- *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 10-3.090*

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.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 2, 2006, received October 4, 2006, designating Animal Care Service, 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) Data System Version 6.24
- Source Emissions Report for the Boone Iowa Humane Society conducted in Boone, Iowa and prepared by Environmental Consulting Services, Inc
- Saint Louis Regional Office Site Survey, dated October 23, 2006.

Mr. Don Courtney
Operator/Owner
Animal Care Service, Inc.
P.O. Box 447
Imperial, MO 63028

RE: New Source Review Permit - Project Number: 2006-10-024

Dear Mr. Courtney:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 revised 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 me at (573) 751-4817, or you may write to me at the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Thank you,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:shl

Enclosures

c: Saint Louis Regional Office
PAMS File 2006-10-024

Permit Number: