



## 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: **06 2 0 1 2 - 0 0 4** Project Number: 2012-04-025

Parent Company: American Cremation Services, LLC

Parent Company Address: 1555 Hensley Lane, Festus, MO 63028

Installation: American Cremation Services, LLC

Installation Number: 099-0150

Installation Address: 1555 Hensley Lane, Festus, MO 63028

Location Information: Jefferson County, S26, T41, R5

Application for Authority to Construct was made for:

An incinerator for the cremation of small animal remains. 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.

JUN 1 1 2012

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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/18 months 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/18 months 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."*

American Cremation Services, LLC  
Jefferson County, S26, T41, R5

1. Process Requirements for the Animal Incinerator (EU-11)
  - A. American Cremation Services, LLC shall burn exclusively non-infectious animal bodies or body parts and containers not containing chlorine.
  - B. Charging of animal remains during a burn cycle is prohibited.
  - C. Opening the incinerator door during a burn cycle is prohibited.
  - D. American Cremation Services, LLC shall maintain the temperature in the secondary combustion chamber at or above 1600 degrees Fahrenheit.
  - E. A continuous chart recorder that monitors, displays and records the temperature in the secondary combustion chamber with an accuracy of two percent ( $\pm 2\%$ ) shall be used to show compliance with Special Condition 1.D.
  - F. Each incinerator batch shall have a burn rate not to exceed 200 pounds per hour.
  - G. Attachment A, or an equivalent form, shall be used to demonstrate compliance with Special Condition 1.F.
2. Opacity  
The cremation unit (EU-11) shall have opacity of less than ten percent (10%) at all times.
3. Requirements for Operators of the Cremation Unit (EU-11)
  - 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

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#### SPECIAL CONDITIONS:

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

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 American Cremation Services, LLC submit within ten days a corrective action plan adequate to timely and significantly mitigate the odors. American Cremation Services, LLC 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. American Cremation Services, LLC 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. American Cremation Services, LLC 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 (5) REVIEW

Project Number: 2012-04-025  
Installation ID Number: 099-0150  
Permit Number:

American Cremation Services, LLC  
1555 Hensley Lane  
Festus, MO 63028

Complete: January 10, 2011

Parent Company:  
American Cremation Services, LLC  
1555 Hensley Lane  
Festus, MO 63028

Jefferson County, S26, T41, R5

REVIEW SUMMARY

- American Cremation Services, LLC has applied for authority to install a small animal cremation unit.
- Hazardous Air Pollutant (HAP) emissions are expected due to the combustion of natural gas and animal remains.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- An afterburner is being used to control emissions from the incinerator.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. All incinerators must obtain a construction permit.
- This installation is located in Jefferson County, a nonattainment area for the 8-hour ozone standard and the particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) standard and an attainment area for all other criteria pollutants. Although part of Jefferson County is a nonattainment area for lead, the installation is not located in the lead nonattainment area.
- 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 is not required for the equipment. Stack testing was conducted on a similar unit and reviewed by the Air Pollution Control Program’s Testing Oversight Unit. The Testing Oversight Unit approved the stack test with a condition that the secondary combustion chamber be maintained at temperatures no lower than what was observed on the stack test but at a suggested minimum of 1600 degrees Fahrenheit.
- 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 Cremation Services, LLC is an existing facility that provides small animal cremation services to veterinary clinics. The installation has 10 existing animal incinerators. The following table provides a summary of the previously issued construction permits from the Air Pollution Control Program.

Table 1: Permit History

| Permit Number | Description  |
|---------------|--|
| 032002-014    | One Therm-Tec Model G-30-P animal incinerator  |
| 012003-013    | One Shenandoah Model C6 animal incinerator<br>One Therm-Tec Model G-12-P-1 animal incinerator  |
| 092003-001    | One Therm-Tec Model G-30-P animal incinerator  |
| 042006-011    | One Therm-Tec Model G-30-P animal incinerator  |
| 012007-008    | One Shenandoah Model C12-400 animal incinerator  |
| 012010-007    | One Shenandoah Model C6T animal incinerator<br>One Shenandoah Model P16 animal incinerator<br>One Shenandoah Model P25 animal incinerator<br>One Therm-Tec Model G-12 animal incinerator |

### PROJECT DESCRIPTION

Animal Cremation Services, LLC has proposed to install a small animal incineration unit (EU-11). The new cremation unit is a Therm-Tec Model CAC-400-G. The unit is a propane-fired incinerator that has a primary combustion chamber equipped with a 2,200,000 Btu per hour burner and a secondary combustion chamber equipped with a 1,600,000 Btu per hour burner.

The animal cremation unit is permitted to burn non-infectious animal bodies and body parts. The Air Pollution Control Program’s definition of the term “non-infectious animal carcasses and body parts” are those remains that are not considered infectious according to 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”. Therefore, the animal cremation unit (EU-11) is not permitted to burn remains meeting the following definition:

*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 pollutants of concern from the animal incinerator are the emissions associated with combustion. The emission factors for particulate matter (PM) and carbon monoxide (CO) were obtained from a stack test report, entitled “RMCEINC Project #2007-15095” (October, 2007). The stack test report indicates that the cremation unit will achieve a combustion efficiency of 99.9%, that the maximum particulate concentration in the crematory’s stack gas will be less than 0.09 grains per dry standard cubic feet and that the crematory’s opacity will not exceed ten percent.

All PM was assumed to be particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>). All other emission factors were obtained from the EPA database for recommended emission factors, Factor Information Retrieval (FIRE) Data System (version 6.25) for SCC 5-02-001-01 and 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.

**Table 2: Emissions Summary (tons per year)**

| Pollutant         | Regulatory <i>De Minimis</i> Levels | Existing Potential Emissions | Existing Actual Emissions | Potential Emissions of the Application | New Installation Conditioned Potential |
|-------------------|-------------------------------------|------------------------------|---------------------------|--|--|
| PM                | 25.0                                | N/A                          | N/A                       | 1.75                                   | N/A                                    |
| PM <sub>10</sub>  | 15.0                                | N/A                          | N/A                       | 1.75                                   | N/A                                    |
| PM <sub>2.5</sub> | 10.0                                | N/A                          | N/A                       | 1.75                                   | N/A                                    |
| SO <sub>x</sub>   | 40.0                                | N/A                          | N/A                       | 1.10                                   | N/A                                    |
| NO <sub>x</sub>   | 40.0                                | N/A                          | N/A                       | 1.31                                   | N/A                                    |
| VOC               | 40.0                                | N/A                          | N/A                       | 1.31                                   | N/A                                    |
| CO                | 100.0                               | N/A                          | N/A                       | 0.26                                   | N/A                                    |
| HAPs              | 10.0/25.0                           | N/A                          | N/A                       | 0.43                                   | 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*. All incinerators must obtain a construction permit.

## APPLICABLE REQUIREMENTS

American Cremation Services, LLC 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.

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Kathi Jantz  
Environmental Engineer

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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 April 2, 2012, received April 4, 2012, designating American Cremation Services, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Stack test report, entitled "RMCEINC Project #2007-15095" (October, 2007).



Mr. Tom Foy  
President  
American Cremation Services, LLC  
1555 Hensley Lane  
Festus, MO 63028

RE: New Source Review Permit - Project Number: 2012-04-025

Dear Mr. Foy:

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 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 Kathi Jantz, 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 time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:kjl

Enclosures

c: St. Louis Regional Office  
PAMS File: 2012-04-025

Permit Number: