



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 0 8 - 0 0 7** Project Number: 2008-02-032

Parent Company: Huddleston Mortuary, Inc.

Parent Company Address: P.O. Box 2305, Joplin, MO 64803

Installation Name: Parker Mortuary

Installation Address: 1502 S. Joplin Ave., Joplin, MO 64804

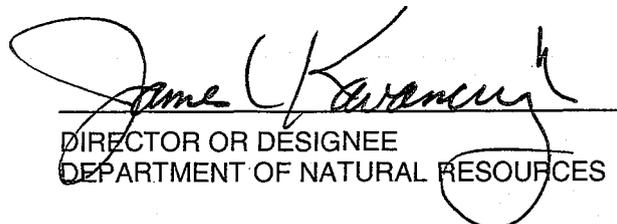
Location Information: Jasper County, S10, T27, R33

Application for Authority to Construct was made for:
The installation of a new Therm-Tec Model SQC-300 human crematorium. 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.

JUN 12 2008

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 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 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 within 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.

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

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Parent Company Address: P.O. Box 2305, Joplin, MO 64803

Installation Name: Parker Mortuary

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Location Information: Jasper County, S10, T27, R33

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Page No.	3
Permit No.	
Project No.	2008-02-032

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."

Parker Mortuary
Jasper County, S10, T27, R33

1. Process Requirements for the Human Crematory (EP-01)
 - A. Parker Mortuary will burn exclusively non-infectious human bodies or body parts not in containers and non-infectious human bodies or body parts in containers not containing chlorine.
 - B. Charging of waste between burn cycles in the batch-type incinerator is prohibited.
 - 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. Hours of Operation
 - A. Parker Mortuary shall limit the crematory's hours of operation to less than 22 hours in any 24-hour period.
 - B. Parker Mortuary shall record the daily hours of operation and make these records available to any Department of Natural Resources staff upon request. These records shall be maintained for not less than five (5) years.
 - C. Parker Mortuary shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 2.B indicate that the source exceeds the limitation of Special Condition Number 2.A.

Page No.	4
Permit No.	
Project No.	2008-02-032

SPECIAL CONDITIONS:

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

3. **Opacity**
The incinerators (BL-01 & BL-02) shall have opacity of less than ten percent (10%) at all times.

4. **Operator Requirements for the Human Crematory (EP-01)**
 - 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 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: 2008-02-032
Installation ID Number: 097-0162
Permit Number:

Parker Mortuary
1502 S. Joplin Ave.
Joplin, MO 64804

Complete: 2/8/2008

Parent Company:
Huddleston Mortuary, Inc.
P.O. Box 2305
Joplin, MO 64804

Jasper County, S10, T27, R33

REVIEW SUMMARY

- Parker Mortuary has applied for authority to install a new Therm-Tec Model SQC-300 human crematorium.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. All HAP emissions are below their respective screen modeling action levels (SMAL).
- 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*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Jasper County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- An ambient air quality modeling was performed to determine the impact of mercury (Hg) emissions. The air quality analysis was required in accordance with 10 CSR 10-6.060 paragraph (5)(D)2.
- Emissions testing is not required for the equipment.
- 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

Parker Mortuary, located in Joplin, will provide cremation services for handling human remains. No permits have been issued to Parker Mortuary from the Air Pollution Control Program. All incinerators are required to obtain an operating permit from the Air Pollution Control Program as mandated in 10 CSR 10-6.065(3)(B). Therefore, this installation will require a basic operating permit.

PROJECT DESCRIPTION

Parker Mortuary has applied for authority to construct one Therm-Tec Model SQC-300 incinerator. The human crematory is a multiple chamber design and has a rated capacity of 100 pounds per hour. This crematory is fired solely by natural gas. The crematory's main chamber burner is rated at 1.36 million British thermal units per hour (MMBtu/hr), and the secondary chamber burner is rated at 2.4 MMBtu/hr.

Parker Mortuary submitted compliance testing that was performed at a unit in Vancouver, Washington on June 13, 2006. Results from that test demonstrated de minimis emissions from that incinerator for particulate matter less than ten microns (PM₁₀), nitrogen oxides (NO_x) and carbon monoxide (CO). Due to the nature of pathological waste incineration, hydrogen chloride (HCl) and metal emissions, such as lead, antimony, mercury and cadmium, may be present.

EMISSIONS/CONTROLS EVALUATION

The emission rates for PM₁₀, CO and NO_x used in this review were obtained from a stack test performed on a similar incinerator. Emissions of sulfur dioxide (SO₂) were calculated using the emission factor from *AP-42 Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition table 1.4-2. Volatile organic compounds (VOCs) were calculated using emission factor from the Factor Information Retrieval (FIRE) Data System Version 6.24 for SCC 5-02-001-01. The emission factors used in the analysis of HAP emissions was obtained from FIRE 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 90 minutes. All HAP emissions are below their respective SMAL.

Individual emission rates are listed in the Emissions Calculation Worksheet.

There is no control equipment for this unit.

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. Since this is a new installation, there are no existing potential or existing actual emissions.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	N/A	N/A	0.36	N/A
SO _x	40.0	N/A	N/A	0.04	N/A
NO _x	40.0	N/A	N/A	2.85	N/A
VOC	40.0	N/A	N/A	0.66	N/A
CO	100.0	N/A	N/A	0.18	N/A
HAPs	10.0/25.0	N/A	N/A	0.22	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 all pollutants are below de minimis levels. Incinerators are required to obtain construction permits under 10 CSR 10-6.060 paragraph (1)(B).

APPLICABLE REQUIREMENTS

Parker Mortuary 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

AIR QUALITY ANALYSIS

In accordance with 10 CSR 10-6.060 paragraph (5)(D)2, an air quality analysis for mercury from the crematory was conducted. The analysis was conducted using the Lakes Environment software package *Screen View*, version 2.5.0, which uses the SCREEN3 dispersion model. The analysis showed that the maximum concentration of mercury exceeded the 24-hour standard. To insure compliance with these standards, the crematory's hours of operation will be limited to 22 hours per 24-hour period.

Table 2: Ambient Impact Analysis of Elemental Mercury

Averaging Time	Risk Assessment Level ($\mu\text{g}/\text{m}^3$)	Modeled Impact ($\mu\text{g}/\text{m}^3$)	Conditioned Impact ($\mu\text{g}/\text{m}^3$)
24-hour	0.14	0.15	0.14
Annual	0.07	0.03	0.07

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.

Michael Mittermeyer
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated 02/05/2008, received 02/08/2008, designating Huddleston Mortuary, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Emissions Calculation Worksheet.
- Southwest Regional Office Site Survey, dated 02/14/2008.

Mr. Tom Keckley
Owner
Parker Mortuary
P.O. Box 2305
Joplin, MO 64803

RE: New Source Review Permit - Project Number: 2008-02-032

Dear Mr. Keckley:

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 amended 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 Michael Mittermeyer at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:mml

Enclosures

c: Southwest Regional Office
PAMS File: 2008-02-032

Permit Number: