AIR QUALITY PERMIT

Issued to:	Vial Funeral Home, Inc P.O. Box 750 Libby, MT 59923	Permit #3881-00 Application Complete: 9/25/06 Preliminary Determination Issued: 10/10/06 Department Decision Issued: 11/13/06 Permit Final: 11/28/06 AFS #053-0017

An air quality permit, with conditions, is hereby granted to Vial Funeral Home, Inc. (Vial), pursuant to Sections 75-2-204, 211, and 215, Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.701, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Permitted Equipment

Vial operates a Mathews Cremation Division – Power Pak II human crematory (crematorium) with a maximum incineration capacity of 150 pounds per hour (lb/hr) and associated equipment. A complete description of the permitted equipment is contained in the permit analysis.

B. Plant Location

The Vial facility is located at 422 West 2nd Street in Libby, Montana. The Legal Description of the site is in the Northwest ¼ of Section 3, Township 30 North, Range 31 West, at Block 18, Libby Amended Plat, Lots 6 through 17, in Lincoln County, Montana.

SECTION II: Limitations and Conditions

A. Operational Requirements

1. Vial shall not incinerate/cremate any material other than human remains and/or any corresponding container unless otherwise approved by the Department of Environmental Quality (Department) in writing (ARM 17.8.749).

2. The Vial crematorium shall be equipped with auxiliary fuel burners. The auxiliary fuel burners shall be used to preheat the secondary chamber of the crematorium to the minimum required operating temperature prior to igniting the primary chamber burner. The operating temperatures shall be maintained during operation and for one-half hour after waste feed has stopped, as follows:

   The secondary chamber operating temperature of the crematorium shall be maintained above 1500°F for any one-hour averaging period with no single reading less than 1400°F (ARM 17.8.752).

3. Vial shall operate the crematorium as specified in the application for Permit #3881-00. Further, Vial shall develop crematorium operation procedures, print those procedures in a crematorium operation procedures manual, and require all personnel who operate the crematorium to familiarize themselves with the operating procedures. A copy of this manual shall be supplied to the Department upon request (ARM 17.8.752).

B. Emission Limitations

Vial shall not cause or authorize to be discharged into the atmosphere from the crematorium:

1. Visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.752); and

2. Any particulate emissions in excess of 0.10 gr/dscf corrected to 12% CO_2 (ARM 17.8.752).

C. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

2. The Department may require testing (ARM 17.8.105).

D. Monitoring Requirements

Vial shall install, calibrate, maintain, and operate continuous monitoring and recording equipment on the crematorium to measure the secondary chamber exit gas temperature. Vial shall also record the daily quantity of material incinerated/cremated and the daily hours of operation of the crematorium (ARM 17.8.749).

E. Operational Reporting Requirement

1. Vial shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions covered by this permit.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in units as required by the Department (ARM 17.8.505).

2. Vial shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. The records compiled in accordance with this permit shall be maintained by Vial as a permanent business record for at least 5 years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant site for inspection by the Department (ARM 17.8.749).

F. Notification

Vial shall provide the Department with written notification of the following dates within the specified time periods (ARM 17.8.749):

1. Commencement of construction of the crematorium within 30 days after commencement of construction.

2. Actual start-up date of the crematorium within 15 days after the actual start-up date.

SECTION III: General Conditions

A. Inspection – Vial shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Vial fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Vial of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Vial may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
Vial Funeral Home, Inc.
Permit #3881-00

I. Introduction

A. Permitted Equipment

On September 25, 2006, Vial Funeral Home, Inc. (Vial) submitted a complete application for a Montana air quality permit to install and operate a Mathews Cremation Division – Power Pak II human crematory (crematorium) and associated equipment. The Vial facility is located at 422 West 2nd Street in Libby, Montana. The Legal Description of the site is in the Northwest ¼ of Section 3, Township 30 North, Range 31 West, at Block 18, Libby Amended Plat, Lots 6 through 17, in Lincoln County, Montana.

B. Source Description

The crematorium is fired on natural gas and is capable of incinerating up to 150 pounds per hour (lb/hr) of human remains.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available upon request from the Department of Environmental Quality (Department). Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   Vial shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.210, Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211, Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212, Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.214, Ambient Air Quality Standard for Hydrogen Sulfide
5. ARM 17.8.220, Ambient Air Quality Standard for Settled PM
6. ARM 17.8.223, Ambient Air Quality Standard for PM_{10}

Vial must comply with all applicable ambient air quality standards. As part of the risk assessment required for this project, the Department conducted Screen 3 modeling, an EPA-approved air dispersion model. The screening analysis demonstrated that the proposed project would comply with all applicable ambient air quality standards and demonstrated negligible risk to human health as required for permit issuance.

C. ARM 17.8, Subchapter 3, Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter (PM).

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Also, no person shall cause or authorize to be discharged into the

outdoor atmosphere from any incinerator, emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes. This rule does not apply to the crematorium because Vial has applied for and received an air quality permit in accordance with ARM 17.8.770 and MCA 75-2-215.

6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

7. ARM 17.8.340 New Source Performance Standards. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of an affected facility under any NSPS subpart defined in 40 CFR 60.

D. ARM 17.8, Subchapter 5, Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. Vial shall submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Vial submitted the required permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department; and the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

The annual assessment and collection of the air quality operation fee, as described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit modification if the facility proposes to construct, alter, or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. Vial does not have the PTE greater than 25 tons per year of any pollutant; however, in accordance with the MCA 75-2-215, an air quality permit must be obtained prior to the construction and operation of any incinerator, regardless of potential incinerator emissions. Because Vial must obtain an air quality permit, all normally applicable requirements apply in this case.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. Vial submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Vial submitted an affidavit of publication of public notice for the September 13, 2006, issue of *The Western News*, a newspaper of general circulation in the Town of Libby in Lincoln County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that Best Available Control Technology (BACT) shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Vial of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, MCA.

F. ARM 17.8, Subchapter 8, Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12, Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:

a. PTE > 100 tons/year of any pollutant

b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department

may establish by rule, or

c. PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3881-00 for Vial, the following conclusions were made:

a. The facility's PTE is less than 100 tons/year for any pollutant.

b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year of all HAPs.

c. This source is not located in a serious PM_{10} nonattainment area.

d. This facility is not subject to any current NSPS.

e. This facility is not subject to and current National Emission Standards for Hazardous Air Pollutants (NESHAP) standards.

f. This source is not a Title IV affected source or a solid waste combustion unit.

g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that Vial will be a minor source of emissions as defined under the Title V operating permit program.

H. MCA 75-2-103, Definitions provides, in part, as follows:

1. "Incinerator" means any single or multiple-chambered combustion device that burns combustible material, alone or with a supplemental fuel or catalytic combustion assistance, primarily for the purpose of removal, destruction, disposal, or volume reduction of all or any portion of the input material.

2. "Solid waste" means all putrescible and nonputrescible solid, semisolid, liquid, or gaseous wastes, including, but not limited to...air pollution control facilities...

I. MCA 75-2-215, Solid or hazardous waste incineration - additional permit requirements:

1. MCA 75-2-215 requires air quality permits for all new commercial solid waste incinerators; therefore, Vial must obtain an air quality permit.

2. MCA 75-2-215 requires the applicant to provide, to the Department's satisfaction, a characterization and estimate of emissions and ambient concentrations of air pollutants, including hazardous air pollutants from the incineration of solid waste. The Department determined that the information submitted in this application is sufficient to fulfill this requirement.

3. MCA 75-2-215 requires that the Department reach a determination that the projected emissions and ambient concentrations constitute a negligible risk to public health, safety, and welfare. The Department completed a health risk assessment based on an emissions inventory and ambient air quality modeling for this proposal. Based on the results of the emission inventory, modeling, and the health risk assessment, the Department determined that Vial's proposal complies with this requirement.

4. MCA 75-2-215 requires the application of pollution control equipment or procedures that meet or exceed BACT. The Department determined that the proposed incinerator constitutes BACT.

III. Best Available Control Technology Analysis

A BACT determination is required for each new or modified source of emissions. Vial shall install on the new or modified source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. In addition, MCA 75-2-215 requires a BACT determination for all pollutants resulting from crematorium operations, not only criteria pollutants.

The Department reviewed other BACT analyses as part of this analysis. Vial proposes to control the emissions from the incinerator/crematorium with a secondary chamber designed specifically to reduce the amount of pollutants, including hazardous air pollutants, emitted from the incinerator/ crematorium. Previous research conducted by the Department indicates very few crematoriums have been required to install additional air pollution control equipment beyond that provided by the design of the incinerator. With the estimated particulate matter emissions being 2.63 tons per year, the incremental cost per ton of additional control would be very high and not in line with control costs of other similar sources. In addition, the incinerator is limited by permit to 0.10 gr/dscf for particulate matter and to 10% opacity. Therefore, the Department determined that compliance with the particulate matter and opacity emission limits, with no additional controls required, constitutes BACT in this case.

BACT for products of combustion/incineration (CO, NO_X, VOCs, and SO_2) and hazardous air pollutants resulting from crematorium operations is good combustion including the requirement that the secondary chamber must be maintained at an operating temperature, which exceeds 1500ºF on an hourly average with no single reading less than 1400ºF. The operating procedures and minimum operating temperature requirements contained in Permit #3881-00 will ensure good combustion and constitute BACT for this source.

Further, natural gas combustion inherently results in low emissions of air pollutants due to characteristics of the natural gas fuel fired. Potential PM_{10}, NO_x, CO, VOC, and SO_2 emissions from the combustion of natural gas to operate the crematorium are 0.07 tpy, 0.88 tpy, 0.74 tpy, 0.05 tpy, and 0.01 tpy, respectively. Because potential emissions of all regulated pollutants resulting from natural gas combustion are low, incorporation of available pollutant-specific control technologies would result in high cost-effective ($/ton removed) values thereby making pollutant-specific add-on controls for PM_{10}, NO_x, CO, VOC, and SO_2 economically infeasible in this case. Therefore, the Department determined that combustion of pipeline quality natural gas only and proper operation and maintenance of the crematorium with no additional control constitutes BACT for all regulated pollutants resulting from natural gas combustion, in this case.

The control options that have been selected as part of this review have controls and control costs similar to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

An emission inventory was completed for Vial's proposal. This emission inventory for criteria pollutants was based on emission factors from the AIRS FACILITY SUBSYSTEM SOURCE CLASSIFICATION CODES (AFSSCC) manual dated March 1990. The application indicated that the fuel used would be natural gas; therefore, the Department also used emission factors from AP-42, Section 1.4, Natural Gas Combustion, to estimate project-specific emissions from the combustion of natural gas.

The Department developed a hazardous air pollutant emission inventory using those emission factors contained in FIRE (the EPA emission factor repository) under SCC 5-02-005-05, pathological incineration. The Department considered only those HAPs for which an emission factor was available and that have been analyzed for other permitted similar sources.

Criteria Pollutant Emissions (tons/year)						
Source	**PM**	**PM_{10}**	**NOx**	**VOC**	**CO**	**SOx**
Crematorium	2.63	1.94	0.99	0.99	0.00	2.63
Natural Gas Fuel Combustion	---	0.07	0.88	0.05	0.74	0.01
Total Criteria Pollutant Potential Emissions	**2.63**	**2.01**	**1.86**	**1.04**	**0.74**	**2.64**

Crematorium Hazardous Air Pollutant Emissions	
HAP	**tons/year**
Bromoform	9.50E-06
Carbon Tetrachloride	1.89E-05
Chloroform	1.79E-05
1,2-Dichloropropane	4.34E-04
Ethyl Benzene	5.29E-04
Naphthalene	3.81E-03
Tetrachloroethylene	1.32E-05
1,1,2,2-Tetrachloroethane	3.61E-05
Toluene	1.52E-03
Vinylidine Chloride	2.33E-05
Xylene	7.23E-04
Total HAP Potential Emissions	**7.13E-03**

CRITERIA POLLUTANT EMISSION CALCULATIONS

Crematorium

Maximum Rated Design Capacity: 150 lb/hr
Operating Hours: 8760 hr/yr
Conversion: 150 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 657.0 ton/yr

PM Emissions
Emission Factor: 8.00 lb/ton (AFSSCC 5-02-005-05, 03/90, Page 227)
Fuel Consumption: 657.0 ton/year (Maximum Rated Design)
Calculations: 657.0 ton/year * 8 lb/ton * 0.0005 ton/lb = 2.63 ton/yr

PM_{10} Emissions:
Emission Factor: 5.92 lb/ton (AFSSCC 5-02-005-05, 03/90, Page 227)
Fuel Consumption: 657.0 ton/year (Maximum Rated Design)
Calculations: 657.0 ton/year * 5.92 lb/ton * 0.0005 ton/lb = 1.94 ton/yr

NO_X Emissions:
Emission Factor: 3.00 lb/ton (AFSSCC 5-02-005-05, 03/90, Page 227)
Fuel Consumption: 657.0 ton/year (Maximum Rated Design)
Calculations: 657.0 ton/year * 3 lb/ton * 0.0005 ton/lb = 0.99 ton/yr

VOC Emissions:
Emission Factor: 3.00 lb/ton (AFSSCC 5-02-005-05, 03/90, Page 227)
Fuel Consumption: 657.0 ton/year (Maximum Rated Design)
Calculations: 657.0 ton/year * 3 lb/ton * 0.0005 ton/lb = 0.99 ton/yr

CO Emissions:
Emission Factor: 0.00 lb/ton (AFSSCC 5-02-005-05, 03/90, Page 227)
Fuel Consumption: 657.0 ton/year (Maximum Rated Design)
Calculations: 657.0 ton/year * 0 lb/ton * 0.0005 ton/lb = 0.00 ton/yr

SO_X Emissions:
Emission Factor: 8.00 lb/ton (AFSSCC 5-02-005-05, 03/90, Page 227)

Fuel Consumption:	657.0 ton/year	(Maximum Rated Design)	
Calculations:	657.0 ton/year * 8 lb/ton * 0.0005 ton/lb =		2.63 ton/yr

Natural Gas Fuel Combustion

Heat Input Value:	0.002 MMscf/hr (Maximum Capacity - Company Information)
Hours of Operation:	8760 hr/yr

PM Emissions

All PM emissions assumed to be PM_{10} emissions (AP-42, Table 1.4-2, 07/98)

PM_{10} Emissions:

Emission Factor:	7.6 lb/MMscf	(AP42, Table 1.4-2, 07/98)	
Calculations:	7.6 lb/MMscf * 0.002 MMscf/hr =		0.015 lb/hr
	0.015 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		0.07 ton/yr

NO_X Emissions:

Emission Factor:	100 lb/MMscf	(AP42, Table 1.4-2, 07/98)	
Calculations:	100 lb/MMscf * 0.002 MMscf/hr =		0.200 lb/hr
	0.200 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		0.88 ton/yr

VOC Emissions:

Emission Factor:	5.5 lb/MMscf	(AP42, Table 1.4-2, 07/98)	
Calculations:	5.5 lb/MMscf * 0.002 MMscf/hr =		0.011 lb/hr
	0.011 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		0.05 ton/yr

CO Emissions:

Emission Factor:	84 lb/MMscf	(AP42, Table 1.4-2, 07/98)	
Calculations:	84 lb/MMscf * 1.5 MMBtu/hr * 0.001 lb/MMscf =		0.168 lb/hr
	0.168 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		0.74 ton/yr

SO_X Emissions:

Emission Factor:	0.6 lb/MMscf	(AP42, Table 1.4-2, 07/98)	
Calculations:	0.6 lb/MMscf * 0.002 MMscf/hr =		0.001 lb/hr
	0.0012 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		0.01 ton/yr

HAZARDOUS AIR POLLUTANT EMISSION CALCULATIONS

Bromoform

Emission Factor:	2.90E-05 lb/ton	(AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr		
Calculations:	2.90 E-05 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =		2.70E-07 g/sec
	2.70E-07 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =		2.18E-06 lb/hr
	2.18E-06 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		9.53E-06 ton/yr

Carbon Tetrachloride

Emission Factor:	5.74E-05 lb/ton	(AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr		
Calculations:	5.74E-05 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =		5.40E-07 g/sec
	5.40E-07 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =		4.30E-06 lb/hr
	4.30E-06 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		1.89E-05 ton/yr

Chloroform

Emission Factor:	5.45E-05 lb/ton	(AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr		
Calculations:	5.45E-05 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =		5.20E-07 g/sec
	5.20E-07 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =		4.09E-06 lb/hr
	4.09E-06 lb/hr * 8760 hr/yr * 0.0005 ton/lb =		1.79E-05 ton/yr

1,2-Dichloropropane

Emission Factor:	1.32E-03 lb/ton	(AFSSCC 5-02-005-05)
Operating Capacity:	150 lb/hr or 0.075 ton/hr	

Calculations:	1.32E-03 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	1.25E-05 g/sec
	1.25E-05 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	9.90E-05 lb/hr
	9.90E-05 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	4.34E-04 ton/yr

Ethyl Benzene

Emission Factor:	1.61E-03 lb/ton (AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr	
Calculations:	1.61E-03 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	1.52E-05 g/sec
	1.52E-05 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	1.21E-04 lb/hr
	1.21E-04 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	5.29E-04 ton/yr

Naphthalene

Emission Factor:	1.16E-02 lb/ton (AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr	
Calculations:	1.16E-02 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	1.10E-04 g/sec
	1.10E-04 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	8.70E-04 lb/hr
	8.70E-04 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	3.81E-03 ton/yr

Tetrachloroethylene

Emission Factor:	4.03E-05 lb/ton (AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr	
Calculations:	4.03E-05 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	3.80E-07 g/sec
	3.80E-07 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	3.02E-06 lb/hr
	3.02E-06 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	1.32E-05 ton/yr

1,1,2,2-Tetrachloroethane

Emission Factor:	1.10E-04 lb/ton (AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr	
Calculations:	1.10E-04 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	1.04E-06 g/sec
	1.04E-06 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	8.25E-06 lb/hr
	8.25E-06 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	3.61E-05 ton/yr

Toluene

Emission Factor:	4.62E-03 lb/ton (AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr	
Calculations:	4.62E-03 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	4.37E-05 g/sec
	4.37E-05 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	3.47E-04 lb/hr
	3.47E-04 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	1.52E-03 ton/yr

Vinylidene Chloride

Emission Factor:	7.10E-05 lb/ton (AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr	
Calculations:	7.10E-05 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	6.70E-07 g/sec
	6.70E-07 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	5.33E-06 lb/hr
	5.33E-06 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	2.33E-05 ton/yr

Xylene

Emission Factor:	2.20E-03 lb/ton (AFSSCC 5-02-005-05)	
Operating Capacity:	150 lb/hr or 0.075 ton/hr	
Calculations:	2.20E-03 lb/ton * 0.075 ton/hr * 453.6 g/lb * 1 hr/3600 sec =	2.08E-05 g/sec
	2.08E-05 g/sec * 1 lb/453.6 g * 60 sec/min * 60 min/hr =	1.65E-04 lb/hr
	1.65E-04 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	7.23E-04 ton/yr

V. Air Quality Impacts

The Department conducted SCREENVIEW, an EPA-approved screening model, using the indicated inputs obtained from the permit application and an emission rate of 2.05E-04 gram per second, which is the sum of all the hazardous air pollutant emissions from the proposed crematorium. The individual one-hour results for each pollutant were then calculated by multiplying the modeled impact of 2.785E-01 $\mu g/m^3$ by the percentage of each individual HAP making up the total of the HAP emissions. The maximum 1-hour concentrations were then converted to an annual average and used in the risk assessment. The results are contained in Section VI, Health Risk Assessment,

of the permit analysis

SCREENVIEW Model Run

Simple Terrain Inputs:

Source Type	=	POINT
Emission Rate (G/S)	=	2.05E-04
Stack Height (M)	=	5.18
Stack Inside Diam (M)	=	0.50
Stack Exit Velocity (M/S)	=	9.02
Stack Gas Exit Temp (K)	=	933.16
Ambient Air Temp (K)	=	293.15
Receptor Height (M)	=	0.0000
Urban/Rural Option	=	RURAL

Stack exit velocity was calculated using a volumetric flow rate of 1775 ACFM.

Summary of Screen View Model Results

Calculation Procedure	Maximum 1 Hour Concentration ($\mu g/m^3$)	Distance of Maximum (M)	Terrain Height (M)
Simple Terrain	2.785E-01	104	0

VI. Health Risk Assessment

A health risk assessment was conducted to determine if the proposed Vial incinerator/crematorium complies with the negligible risk requirement of MCA 75-2-215. The emission inventory did not contain sufficient quantities of any pollutant on the Department's list of pollutants for which non-inhalation impacts must be considered; therefore, the Department determined that inhalation risk was the only necessary pathway to consider. Only those hazardous air pollutants for which there were established emission factors were considered in the emission inventory.

Negligible Risk Assessment[1]					
Hazardous Air Pollutant	Modeled Concentration	Cancer URF[2] $(ug/m^3)^{-1}$	Cancer Risk[3]	CNCREL[6] (ug/m^3)	CNCREL Hazard Quotient[7]
Bromoform	3.72E-05	1.10E-06	4.09E-11	ND	NA
Carbon Tetrachloride	7.36E-05	1.50E-05	1.10E-09	1.90E+02	3.88E-07
Chloroform	6.99E-05	2.30E-05	1.61E-09	9.80E+01	7.13E-07
1,2-Dichloropropane[4]	1.69E-03	1.90E-05	3.22E-08	4.00E+00	4.23E-04
Ethyl Benzene	2.07E-03	ND	ND	1.00E+03	2.07E-06
Naphthalene	1.49E-02	3.40E-05	5.06E-07	3.00E+00	4.96E-03
Tetrachloroethylene[5]	5.17E-05	5.90E-06	3.05E-10	2.70E+02	1.91E-07
1,1,2,2-Tetrachloroethane	1.41E-04	5.80E-05	4.87E-09	ND	NA
Toluene	5.93E-03	ND	ND	4.00E+02	1.48E-05
Vinylidene Chloride	9.11E-05	5.00E-05	4.55E-09	2.00E+02	4.55E-07
Xylene	2.82E-03	ND	ND	1.00E+02	2.82E-05
Total Risks	----------	----------	5.54E-07	----------	5.43E-03
A copy of the Screen View modeling conducted for this project is on file with the Department.					

(1) Source of chronic dose-response values is from Table 1: Prioritized Chronic Dose Response Values for Screening Risk Assessments (www.epa. Gov/ttn/atw/toxsource/table1.pdf, 2/28/06).
(2) Cancer Chronic Inhalation Risk Factor $(1/ug/m^3)$.
(3) Cancer Risk is unitless and is calculated by multiplying the predicted concentration by the URF.
(4) AKA Propylene dichloride.
(5) AKA Tetrachloroethene, Perchloroethylene.
(6) Chronic Noncancer Reference Exposure Level.
(7) The CNCREL hazard quotient is determined by calculating the modeled HAP concentration by the CNCREL.

The Department determined that the risks estimated in the risk assessment are in compliance with the requirement to demonstrate negligible risk to human health and the environment. As documented in the above table and in accordance with the negligible risk requirement, no single HAP concentration results in Cancer Risk greater than 1.00E-06 and the sum of all HAPs results in a Cancer Risk of less than 1.00E-05. Further, the sum of the Chronic Noncancer Reference Exposure Level (CNCREL) hazard quotient is 5.43E-03, which is less than 1.0 as required to demonstrate compliance with the negligible risk requirement.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air and Waste Management Bureau
1520 East Sixth Avenue
P.O. Box 200901, Helena, Montana 59620-0901
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued For: Vial Funeral Home, Inc.
P.O. Box 750
422 West 2nd Street
Libby, MT 59923

Permit Number: 3881-00

Preliminary Determination Issued: October 10, 2006
Department Decision Issued: November 13, 2006
Permit Final: November 29, 2006

1. *Legal Description of Site*: The Vial facility is located at 422 West 2nd Street in Libby, Montana. The Legal Description of the site is in the Northwest ¼ of Section 3, Township 30 North, Range 31 West, at Block 18, Libby Amended Plat, Lots 6 through 17, in Lincoln County, Montana.

2. *Description of Project*: Vial proposed to install and operate a Mathews Cremation Division – Power Pak II human crematory (crematorium) and associated equipment. The crematorium is fired on natural gas and would be capable of incinerating up to 150 pounds per hour of human remains.

3. *Objectives of Project*: The project would allow Vial to safely dispose of human remains while maintaining compliance with negligible risk requirements as discussed in Section VI of the permit analysis. Further, the project would result in business and revenue for the company.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Vial demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in Permit #3881-00.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic life and Habitats:

Emissions from the proposed project would affect terrestrial and aquatic life and habitats in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted.

Further, the crematorium would operate within a building located in an area zoned as commercial and only a limited amount of construction or ground disturbance to the area would be required. Overall, any impact to the terrestrial and aquatic life and habitats of the proposed project area would be minor.

B. Water Quality, Quantity and Distribution:

The proposed project would not affect water quantity or distribution in the proposed project area. The crematorium would operate within a building and would not discharge or use water as part of the project.

Emissions from the proposed project would affect water quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis, any emissions and resulting deposition impacts from the project would be minor due to the low concentration of those pollutants emitted.

C. Geology and Soil Quality, Stability, and Moisture:

The proposed project would affect the geology, soil quality, stability, and moisture of the proposed project area. The crematorium would operate within a building located in an area zoned as commercial and only a limited amount of construction or ground disturbance to the area would be required.

Further, as described in Section V and Section VI of the permit analysis, the crematorium would result in minor air pollution emissions to the outside ambient environment. These pollutants would deposit on the soils in the surrounding area. Any impact from deposition of these pollutants would be minor due to dispersion characteristics and the low concentration of those pollutants emitted.

D. Vegetation Cover, Quantity, and Quality:

Emissions from the proposed project would affect vegetation cover, quantity, and quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis any emissions and resulting impacts from the project would be minor.

Further, the crematorium would operate within a building located in an area zoned as commercial and only a limited amount of construction or ground disturbance to the area would be required. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would be minor.

E. Aesthetics:

The proposed project would result in a minor impact to the aesthetic nature of the proposed project area because the crematorium would operate within a building located in an area zoned as commercial and a limited amount of construction and site disturbance would be required for the construction project. Because the construction area is designated for commercial use, the project would not change the aesthetic nature of the area. Further, visible emissions from the source would be limited to 10% opacity and the permit would include emission control requirements. Also, the project would result in only a minor amount of noise from normal operations.

F. Air Quality:

The proposed project would result in the emission of various criteria pollutants and HAPs to the ambient air in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis, Vial demonstrated, through air dispersion modeling, that any air quality impacts from the proposed project would be minor and would constitute negligible risk to human health and the environment.

The Department conducted air dispersion modeling to determine the ambient air quality impacts from HAPs that would be generated by the crematorium. The SCREENVIEW model was selected for the air dispersion modeling. The full meteorology option was selected to provide a conservative result. Receptors were placed from 0 to 5000 meters in a simple terrain array.

Stack parameters and emission rates used in the SCREENVIEW model are contained in Section V of the permit analysis and are on file with the Department. Stack velocity and gas temperature were taken from data provided by the manufacturer of the crematorium. Due to the dispersion characteristics and low levels of pollutants that would be emitted from the proposed project the Department determined that any impacts to air quality would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources:

In an effort to identify any unique endangered, fragile, or limited environmental resources in the proposed area of construction and operation, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). NRIS search results concluded that there are five such environmental resources on file for the area. Area in this case is defined by the township and range of the proposed site, with an additional one-mile buffer.

These species of special concern include Salvelinus confluentus (Bull Trout), Oncorhynchus mykiss gairdneri (Columbia River Redband Trout), Cottus rhotheus (Torrent Sculpin), *Lynx canadensis* (Canadian Lynx), and Ursos arctos (Brown or Grizzly Bear). While these resources may be found in specific habitats throughout the defined area, the NRIS search did not indicate that these species of special concern would locate directly on or relatively near the proposed commercial site, which is within the city limits of Libby, Montana. Therefore, it is unlikely that these species of special concern would realize any impact from the proposed operations beyond minor air emission impacts.

Emissions from the proposed project could impact the previously highlighted unique, endangered, fragile, or limited environmental resources located in the proposed project area. However, as detailed in Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted. Overall, any impact to this unique endangered, fragile, or limited environmental resource of the proposed project area would be minor.

H. Demands on Environmental Resources of Water, Air, and Energy:

The proposed project would result in minor demands on environmental resources of water and air as discussed in Section 7.B and 7.F, respectively, of this EA. Further, as detailed in Section V and Section VI of the permit analysis, project impacts on air resources in the proposed project area would be minor due to dispersion characteristics and the low concentration of those pollutants emitted. Finally, because the project is small by industrial standards, little energy would be required for operation and the resulting impact on energy resources would be minor.

I. Historical and Archaeological Sites:

The proposed project would not result in any impacts to historical and archaeological sites in the proposed project area because the crematorium would operate within an area zoned as commercial, would not disturb any structures in existence for more than fifty years, and would only require a limited amount of construction and ground disturbance.

According to correspondence from the Montana State Historic Preservation Office (SHPO) there have been several previously recorded historic sites within the proposed project area. In addition to these sites, there have been a few previously conducted cultural resource inventories done in the area. According to SHPO, any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. However, because the proposed project would not affect any structures over fifty years old, SHPO determined that there is a low likelihood cultural properties will be impacted. Based on this information, SHPO determined that a cultural resource inventory is unwarranted for the proposed project. However, should cultural materials be inadvertently discovered during this project, SHPO recommends that Vial contact the SHPO office for a site investigation prior to further disturbance.

J. Cumulative and Secondary Impacts:

Overall, the cumulative and secondary impacts from this project on the physical and biological environment in the immediate area would be minor due to the relatively small size and potential environmental impact of the proposed operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in Permit #3881-00.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores			X			Yes
B	Cultural Uniqueness and Diversity			X			Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population			X			Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The Department has prepared the following comments.

A. Social Structures and Mores:
B. Cultural Uniqueness and Diversity:

The proposed project would have only a minor impact on the social structures or mores and cultural uniqueness and diversity of the proposed area of operation because the project is small by industrial standards and operations would take place within an area zoned as commercial. The predominant use of the surrounding area would not change as a result of the proposed project.

C. Local and State Tax Base and Tax Revenue:

The proposed project would have a minor impact on the local and state tax base and tax revenue. The project is small by industrial standards thus any economic impact to the commercially zoned area would be minor. Further, the project would require only a minor amount of new construction and a limited amount of employees/operators for normal operations.

D. Agricultural or Industrial Production:

Because the proposed project would operate within an area zoned as commercial, the project would not affect or displace any land used for agricultural production and would require only a limited amount of construction. Further, the nature of the project would dictate that no additional industrial production would result from the proposed project.

E. Human Health:

The peak annual ambient impact from the operation of the crematorium would be 0.2785E-01 $\mu g/m^3$. The predicted annual ambient impact of each individual HAP was determined by multiplying the peak annual ambient concentration by the emission rate of the HAP. The impacts calculated for each

HAP are compared to the cancer and non-cancer levels specified in Tables 1 and 2 of ARM 17.8.770. If the predicted ambient impact of a particular HAP is less than the level specified in the table and the inhalation pathway is the only appropriate pathway, that HAP can be excluded from the human health risk assessment. The table summarized in Section V of the permit analysis indicates the calculated ambient impacts of the HAPs, the cancer and non-cancer levels, and whether or not each HAP passes the screening criteria.

As detailed in Section VI of the permit analysis, a health risk assessment was conducted to determine if the proposed crematorium would comply with the negligible risk requirement of MCA 75-2-215 and ARM 17.8.770. The emission inventory did not contain sufficient quantities of any pollutant on the Department's list of pollutants for which non-inhalation impacts must be considered; therefore, the Department determined that inhalation risk would be the only necessary pathway to consider. As defined in ARM 17.8.740(10), negligible risk is "*an increase in excess lifetime cancer risk of less than 1.0 x 10^{-6} for any individual pollutant, and 1.0 x 10^{-5} for the aggregate of all pollutants, and an increase in the sum of the non-cancer hazard quotients for all pollutants with similar toxic effects of less than 1.0 in order to determine negligible risk*." For the purposes of determining the negligible risk of the crematorium, all pollutants were included in the human health risk assessment.

All of the individual pollutant concentrations for the ELCR meet the acceptable risk limit because they are less than 1.00E-06 for each pollutant and less than 1.00E-05 for the aggregate of all pollutants. Further, the sums of the chronic and acute non-cancer hazard quotients are less than 1.0. Therefore, the crematorium proposed for the Vial facility meets the criteria of ARM 17.8.770 and operation of the incinerator would be considered a negligible risk to public health, safety, welfare, and to the environment. Overall, any impacts to human health in the proposed project area would be minor.

F. Access to and Quality of Recreational and Wilderness Activities:

Because the proposed project would operate within an area zoned as commercial, the project would not affect any access to or quality of any recreation or wilderness activities in the area.

G. Quantity and Distribution of Employment:
H. Distribution of Population:

The proposed project would require a limited amount of new employment in the area. The project would require only a single operator and possibly a support employee. Therefore, the proposed project would have only a minor impact on the quantity and distribution of population and employment in the area.

I. Demands for Government Services:

Government services would be required for acquiring the appropriate permits from government agencies. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Demands for government services would be minor.

J. Industrial and Commercial Activity:

The proposed project would result in only a minor impact on local industrial and commercial activity because the proposed project would operate within an area zoned as commercial, would require only a limited amount of additional industrial construction, and would not result in additional industrial production.

K. Locally Adopted Environmental Plans and Goals:

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the proposed project. The state standards would be protective of the proposed project area.

L. Cumulative and Secondary Impacts:

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social environment in the immediate area due to the relatively small size of the operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3881-00.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permit action is for the construction and operation of a crematorium. Permit #3881-00 includes conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, as detailed in the above EA there are no significant impacts associated with the proposed project.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program.

EA prepared by: M. Eric Merchant, MPH
Date: September 25, 2006