

October 15, 2024

Hillcrest Lawn Memorial Association  
Phil Cote  
1410 – 13<sup>th</sup> Street South  
Great Falls, Montana 59405

Sent via email: [hillcrest@bresnan.net](mailto:hillcrest@bresnan.net); [debi@americancrematory.com](mailto:debi@americancrematory.com)

**RE: Final Permit Issuance for MAQP #4058-01**

Dear Mr. Cote:

Montana Air Quality Permit (MAQP) #4058-01 is deemed final as of 10/14/2024, by DEQ. This permit is for Hillcrest Lawn Memorial Association, a Crematory. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For DEQ,



Eric Merchant  
Permitting Services Section Supervisor  
Air Quality Bureau  
(406) 444-3626



Troy M Burrows  
Air Quality Scientist  
Air Quality Bureau  
(406) 444-1452

Montana Department of Environmental Quality  
Air, Energy & Mining Division  
Air Quality Bureau

Montana Air Quality Permit #4058-01

Hillcrest Lawn Memorial Association  
Crematory – Great Falls  
1410 – 13<sup>th</sup> Street South  
P.O. Box 2434  
Great Falls, MT 59403

October 14, 2024



## AIR QUALITY PERMIT

Issued to: Hillcrest Lawn Memorial Association      Permit #4058-01  
1410 – 13<sup>th</sup> Street South      Application Complete: 07/01/2024  
P.O. Box 2434      Preliminary Determination Issued: 08/07/2024  
Great Falls, MT 59403      Department Decision Issued: 9/12/2024  
Permit Final: 10/14/2024  
AFS #013-0025

An air quality permit, with conditions, is hereby granted to Hillcrest Lawn Memorial Association (Hillcrest), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

### SECTION I: Permitted Facilities

#### A. Plant Location

The Hillcrest facility is located at 1410 – 13th Street South, Great Falls, Montana. The Legal Description of the site is in Section 13, Township 20 North, Range 3 East, Cascade County, Montana. Lat and Long: 47.4892779, -111.2862605.

#### B. Current Permit Action

On June 17, 2024, Hillcrest Lawn Memorial Association submitted a Montana air quality permit application. This application was deemed complete on July 1, 2024, and was for the removal of a 1978 cremation unit, with a new Model 200 HT replacement unit with a capacity of 150 lbs/hr. The new unit is referenced as Cremation Unit #1.

### SECTION II: Limitations and Conditions

#### A. Operational Requirements

1. Hillcrest shall not incinerate/cremate any material other than human remains and/or any corresponding container unless otherwise approved by the Department of Environmental Quality (DEQ) in writing (ARM 17.8.749).
2. The Cremation Units 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 Cremation Units 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. Hillcrest shall develop crematorium operation procedures for the Cremation Units, print those procedures in a crematorium operation procedures manual, and require all personnel who operate the Cremation Units to familiarize themselves with the operating procedures. A copy of this manual shall be supplied to DEQ upon request (ARM 17.8.752).

B. Emission Limitations

Hillcrest shall not cause or authorize to be discharged into the atmosphere from each of the Cremation Units:

1. Visible emissions that exhibit an opacity of 10% or greater averaged over six consecutive minutes (ARM 17.8.752); and
2. Any particulate emissions in excess of 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide (CO<sub>2</sub>) (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. DEQ may require testing (ARM 17.8.105).

D. Monitoring Requirements

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

E. Operational Reporting Requirement

1. Hillcrest shall supply DEQ with annual production information for all emission points, as required by DEQ 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 DEQ by the date required in the emission inventory request. Information shall be in units as required by DEQ (ARM 17.8.505).

2. Hillcrest shall notify DEQ 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 DEQ, 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 Hillcrest as a permanent business record for at least 5 years following the date of the measurement, shall be submitted to DEQ upon request, and shall be available at the plant site for inspection by DEQ (ARM 17.8.749).

F. Notification

Hillcrest did provide DEQ with written notification of the following dates within the specified time periods (ARM 17.8.749):

1. Commencement of construction of Cremation Unit #1 within 30 days after commencement of construction.
2. Actual start-up date of Cremation Unit #1 within 15 days after the actual start-up date.

SECTION III: General Conditions

- A. Inspection – Hillcrest shall allow DEQ’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 Hillcrest fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Hillcrest 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 DEQ’s decision may request, within 15 days after DEQ 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 DEQ’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 DEQ’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, DEQ’s decision on the application is final 16 days after DEQ’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 DEQ at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Hillcrest 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).

Montana Air Quality Permit Analysis  
Hillcrest Lawn Memorial Association.  
MAQP #4058-01

I. Introduction

A. Permitted Equipment

On January 23, 2007, Hillcrest Lawn Memorial Association (Hillcrest) submitted a complete Montana air quality permit application for the installation and operation of a natural gas-fired 2007 model 1E43-PPII Mathews Cremation Division – Power Pak II human crematory (Cremation Unit #2) with a maximum incineration capacity of 150 pounds per hour (lb/hr). In addition, Hillcrest owns and operates an American natural gas-fired model 200 HT Crematory (Cremation Unit #1) with a maximum incineration capacity of 150 lb/hr and associated equipment. The Hillcrest facility is located at 1410 – 13<sup>th</sup> Street South, Great Falls, Montana. The Legal Description of the site is in Section 13, Township 20 North, Range 3 East, Cascade County, Montana. 47.4892779 Latitude and -111.2862605 Longitude.

B. Source Description

Cremation Unit #1 and #2 are both fired on natural gas and are each capable of incinerating up to 150 lb/hr of human remains per unit per hour.

C. Permit History

On January 23, 2007, Hillcrest Lawn Memorial Association (Hillcrest) submitted a complete Montana air quality permit application for the installation and operation of two natural gas-fired cremation units. MAQP #4058-00 was issued on 3/29/2007.

D. Current Permit Action

On June 17, 2024, Hillcrest Lawn Memorial Association submitted a Montana air quality permit application. This application was deemed complete on July 1, 2024, and was for the removal of a 1978 cremation unit, with a new Model 200 HT replacement unit with a capacity of 150 lbs/hr. The new unit is referenced as Cremation Unit #1.

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 (DEQ). Upon request, DEQ 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 DEQ, 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 DEQ.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by DEQ, 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).

Hillcrest 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 DEQ upon request.

4. ARM 17.8.110 Malfunctions. (2) DEQ 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 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM<sub>10</sub>
11. ARM 17.8.230 Fluoride in Forage

Hillcrest must comply with all applicable ambient air quality standards. As part of the risk assessment required for this facility, DEQ conducted SCREENVIEW 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 six 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 six consecutive minutes. This rule does not apply to Cremation Unit #1 because Hillcrest has applied for and received an air quality permit in accordance with ARM 17.8.770 and MCA 75-2-215 for this unit. However, because Cremation Unit #2 is an existing incinerator the unit is subject to the requirements of this rule as generally applicable requirements.
  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 Code of Federal Regulations (CFR) Part 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. Hillcrest 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 DEQ. Hillcrest 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 DEQ by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by DEQ; 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. DEQ 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. Hillcrest 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 Hillcrest 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. Hillcrest 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. Hillcrest submitted an affidavit of publication of public notice for the June 14, 2024, issue of *The Great Falls Tribune*, a newspaper of general circulation in the Town of Great Falls in Cascade 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 DEQ 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 DEQ 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 Hillcrest 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 DEQ'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 DEQ.
  15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to DEQ 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 100 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 DEQ may establish by rule, or
  - c. PTE > 70 tons/year of PM<sub>10</sub> in a serious PM<sub>10</sub> 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 #4058-01 for Hillcrest, 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<sub>10</sub> 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.
  - g. This source is not an EPA designated Title V source.

Based on these facts, DEQ determined that Hillcrest 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, Hillcrest must obtain an air quality permit.
2. MCA 75-2-215 requires the applicant to provide, to DEQ's satisfaction, a characterization and estimate of emissions and ambient concentrations of air pollutants, including hazardous air pollutants from the incineration of solid waste. DEQ determined that the information submitted in this application is sufficient to fulfill this requirement.
3. MCA 75-2-215 requires that DEQ reach a determination that the projected emissions and ambient concentrations constitute a negligible risk to public health, safety, and welfare. Hillcrest 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, DEQ determined that Hillcrest'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. DEQ determined that the proposed incinerator (Cremation Units #1 and #2) constitutes BACT.

III. Best Available Control Technology Analysis

A BACT determination is required for each new or modified source of emissions. Hillcrest 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 Cremation Unit #1 operations, not only criteria pollutants.

DEQ reviewed other BACT analyses as part of this analysis. Hillcrest proposes to control the emissions from the Cremation Units with a secondary chamber designed specifically to reduce the amount of pollutants, including hazardous air pollutants, emitted from Cremation Unit #1. Research conducted by DEQ 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 actual particulate matter emissions from Cremation Unit #1 being 0.07 pounds per hour (lb/hr), 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, DEQ 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 (carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), volatile organic compounds (VOCs), and sulfur dioxide (SO<sub>2</sub>)) and hazardous air pollutants resulting from both Cremation Units operation is good combustion including the requirement that the secondary chamber must be maintained at an operating temperature, which exceeds 1500°F on an hourly average with no single

reading less than 1400°F. The operating procedures and minimum operating temperature requirements contained in Permit #4058-01 will ensure good combustion and constitute BACT for Cremation Unit #1.

Further, natural gas combustion inherently results in low emissions of air pollutants due to characteristics of the natural gas fuel fired. Potential particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM<sub>10</sub>), NO<sub>x</sub>, CO, VOC, and SO<sub>2</sub> emissions from the combustion of natural gas to operate the Cremation Units are well below the federal limits as shown in the emissions inventory section of this permit analysis. 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<sub>10</sub>, NO<sub>x</sub>, CO, VOC, and SO<sub>2</sub> economically infeasible in this case. Therefore, DEQ determined that combustion of pipeline-quality natural gas only and proper operation and maintenance of Cremation Unit #1 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 Hillcrest’s proposal. This emission inventory for criteria pollutants for Cremation Unit #1 and #2 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, DEQ also used emission factors from AP-42, Section 1.4, Natural Gas Combustion, to estimate project-specific emissions from the combustion of natural gas.

Further, because Cremation Unit #2 is also subject to the requirements of MCA 75-2-215, DEQ developed a hazardous air pollutant (HAP) emission inventory for Cremation Unit #2 using those emission factors contained in FIRE (the EPA emission factor repository) under SCC 5-02-005-05, pathological incineration. In accordance with the requirements of MCA 75-2-215, estimated HAP emissions from Cremation Unit #2 will be used to demonstrate project compliance with negligible risk to human health and the environment. DEQ considered only those HAPs for which an emission factor was available and that have been analyzed for other permitted similar sources. A detailed analysis and the results of the demonstration are contained in Section V and VI of the permit analysis.

| <b>Criteria Pollutant Emissions (tons/year)</b>     |              |                        |                       |             |             |                       |
|---|--------------|------------------------|-----------------------|-------------|-------------|-----------------------|
| <b>Source</b>                                       | <b>PM</b>    | <b>PM<sub>10</sub></b> | <b>NO<sub>x</sub></b> | <b>VOC</b>  | <b>CO</b>   | <b>SO<sub>x</sub></b> |
| Cremation Unit #1                                   | 0.3066       | 0.3066                 | 1.71                  | 0.99        | 0.04        | 2.63                  |
| Cremation Unit #1 Natural Gas Fuel Combustion       | ---          | 0.07                   | 0.88                  | 0.05        | 0.74        | 0.01                  |
| Cremation Unit #2                                   | 2.63         | 1.94                   | 0.99                  | 0.99        | 0.00        | 2.63                  |
| Cremation Unit #2 Natural Gas Fuel Combustion       | ---          | 0.07                   | 0.88                  | 0.05        | 0.74        | 0.01                  |
| <b>Total Criteria Pollutant Potential Emissions</b> | <b>2.937</b> | <b>2.387</b>           | <b>4.46</b>           | <b>2.08</b> | <b>1.52</b> | <b>5.28</b>           |

| <b>Cremation Unit #2: Hazardous Air Pollutant Emissions</b> |                  |
|---|------------------|
| <b>HAP</b>  | <b>tons/year</b> |
| 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         |
| Vinylidene Chloride   | 2.33E-05         |
| Xylene  | 7.23E-04         |
| <b>Total HAP Potential Emissions</b>                        | <b>7.13E-03</b>  |

**Cremation Unit #1 emissions:**

| <b>Parameter</b>                                  | <b>Units</b> | <b>Results</b> |
|---|--------------|----------------|
| <b>Total Particulate Mass Flow Rate (uncorr).</b> |              |                |
| <b>Grain Loading</b>                              | gr/dscf      | 0.01215        |
| <b>Concentration @ 12% CO<sub>2</sub></b>         | gr@12%       | 0.00450        |
| <b>Mass Emissions</b>                             | lb/hr        | 0.07           |
| <b>Solid Particulate Mass Flow Rate (uncorr).</b> |              |                |
| <b>Grain Loading</b>                              | gr/dscf      | 0.01144        |
| <b>Concentration @ 12% CO<sub>2</sub></b>         | gr@12%       | 0.05126        |
| <b>Mass Emissions</b>                             | lb/hr        | 0.06           |
| <b>Run Time</b>                                   | --           |                |
| <b>NO<sub>x</sub></b>                             | ppm          | 82.17          |
| <b>NO<sub>x</sub>, @ 15% O<sub>2</sub></b>        | ppm          | 108.45         |
| <b>NO<sub>x</sub> Emission Rate</b>               | lb/hr        | 0.39           |
| <b>CO</b>   | ppm          | 2.37           |
| <b>CO, @ 15% O<sub>2</sub></b>                    | ppm          | 3.19           |
| <b>CO Emission Rate</b>                           | lb/hr        | 0.01           |
| <b>Total ROG<sub>s</sub></b>                      | ppm          | 8.66           |
| <b>ROG<sub>s</sub>, @ 15% O<sub>2</sub></b>       | lb/hr        | 11.35          |
| <b>ROG<sub>s</sub> Emission Rate</b>              | lb/hr        | 0.02           |
| <b>O<sub>2</sub></b>                              | %            | 16.44          |
| <b>Stack Flow</b>                                 | dscfm        | 658            |
| <b>Numbers of Human cremated (1 per Test)</b>     | Humans       | 3              |

|            | lb/hr        | lb/hr        | lb/hr        | lb/hr       | lb/hr    | lb/MMSCFH |
|------------|--------------|--------------|--------------|-------------|----------|-----------|
| Aluminum   | ND< 4.78E-04 | ND< 4.79E-04 | ND< 4.65E-04 | ND<4.74E-04 | 0.00E+00 | 0.00E+00  |
| Antimony   | ND< 4.78E-06 | ND< 4.79E-06 | ND< 4.65E-06 | ND<4.74E-06 | 0.00E+00 | 0.00E+00  |
| Arsenic    | 1.63E-05     | 6.90E-06     | 6.23E-06     | 9.80E-06    | 9.80E-06 | 3.96E-01  |
| Barium     | 7.36E-06     | 3.74E-06     | 4.37E-06     | 5.16E-06    | 5.16E-06 | 2.08E-01  |
| Beryllium  | ND<4.78E-06  | ND< 4.79E-06 | ND< 4.65E-06 | ND<4.74E-06 | 0.00E+00 | 0.00E+00  |
| Cadmium    | ND< 4.78E-06 | ND< 4.79E-06 | ND< 4.65E-06 | ND<4.74E-06 | 0.00E+00 | 0.00E+00  |
| Chromium ( | ND< 7.65E-06 | 7.67E-06     | ND< 7.44E-06 | 7.59E-06    | 7.59E-06 | 3.06E-01  |
| Cobalt     | ND< 6.03E-06 | ND< 6.04E-06 | ND< 5.86E-06 | ND<5.98E-06 | 0.00E+00 | 0.00E+00  |
| Copper     | 2.49E-05     | 7.10E-06     | 6.70E-06     | 1.29E-05    | 1.29E-05 | 5.20E-01  |
| Lead       | ND< 4.78E-06 | ND< 4.79E-06 | ND< 4.65E-06 | ND<4.74E-06 | 0.00E+00 | 0.00E+00  |
| Manganese  | 9.56E-05     | 1.25E-05     | 3.63E-04     | 1.57E-04    | 1.57E-04 | 6.34E+00  |
| Mercury    | ND< 9.56E-07 | ND< 9.59E-07 | ND< 9.30E-07 | ND<9.48E-07 | 0.00E+00 | 0.00E+00  |
| Mercury    | ND< 1.24E-08 | ND< 1.15E-08 | ND< 1.12E-08 | ND<1.17E-08 | 0.00E+00 | 0.00E+00  |
| Mercury    | ND< 3.83E-08 | ND< 3.84E-08 | ND< 3.72E-08 | ND<3.79E-08 | 0.00E+00 | 0.00E+00  |
| Mercury    | ND< 1.01E-06 | ND< 1.01E-06 | ND< 9.78E-07 | ND<9.98E-07 | 0.00E+00 | 0.00E+00  |
| Nickel     | 7.27E-06     | ND< 4.79E-06 | ND< 4.65E-06 | 5.57E-06    | 5.57E-06 | 2.25E-01  |
| Selenium   | ND< 4.78E-06 | ND< 4.79E-06 | ND< 4.65E-06 | ND<4.74E-06 | 0.00E+00 | 0.00E+00  |
| Silver     | 4.78E-06     | ND< 4.79E-06 | ND< 4.65E-06 | ND<4.74E-06 | 0.00E+00 | 0.00E+00  |
| Thallium   | ND< 6.31E-06 | ND< 6.33E-06 | ND< 6.14E-06 | ND<6.26E-06 | 0.00E+00 | 0.00E+00  |
| Vanadium   | ND< 9.18E-06 | ND< 9.21E-06 | ND< 8.93E-06 | ND<9.10E-06 | 0.00E+00 | 0.00E+00  |
| Zinc       | 6.50E-05     | ND< 3.84E-05 | ND< 3.72E-05 | 4.69E-05    | 4.69E-05 | 1.89E+00  |

## CRITERIA POLLUTANT EMISSION CALCULATIONS

### Cremation Unit #1 and #2

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

#### PM<sub>10</sub> Emissions:

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

#### NO<sub>x</sub> Emissions:

Emission Factor: 3.00 lb/ton (AFSSCC 5-02-005-05, 03/90, Page 227)  
 Fuel Consumption: 657.0 tons/year (Maximum Rated Design)  
 Calculations: 657.0 tons/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 tons/year (Maximum Rated Design)  
 Calculations: 657.0 tons/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 tons/year (Maximum Rated Design)  
 Calculations: 657.0 tons/year \* 0 lb/ton \* 0.0005 ton/lb = 0.00 ton/yr

**SO<sub>x</sub> Emissions:**

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

**Natural Gas Fuel Combustion: Cremation Unit #1 and #2**

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<sub>10</sub> emissions (AP-42, Table 1.4-2, 07/98)

**PM<sub>10</sub> 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<sub>x</sub> 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<sub>x</sub> 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 Emissions for each unit**

**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

$$4.30E-06 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 1.89E-05 \text{ ton/yr}$$

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

DEQ 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 Cremation Unit #1. The individual one-hour results for each pollutant were then calculated by multiplying the modeled impact of 2.785E-01  $\mu\text{g}/\text{m}^3$  by the percentage of each individual HAP making up the total of the HAP emissions. Hillcrest contracted with York Engineering to conduct the health risk assessment for unit #1 on this project and provided those results to DEQ. The results are contained in Section VI, Health Risk Assessment, of the permit analysis:

Cremation Unit #2: 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 ( $\mu\text{g}/\text{m}^3$ ) | 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 Cremation Unit #1 complies with the negligible risk requirement of MCA 75-2-215. The emission inventory did not contain sufficient quantities of any pollutant on DEQ's list of pollutants for which non-inhalation impacts must be considered; therefore, DEQ 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.

Cremation Unit #1: Health Risk Assessment conducted by York Engineering

| Health Risk                             | Point of Maximum Impact (PMI) | Maximally Exposed Individual Resident (MEIR) | Sensitive Receptor | Maximally Exposed Individual Worker (MEIW) |
|---|-------------------------------|--|--------------------|--|
| Cancer Risk (in a Million) <sup>1</sup> | 11.32                         | 5.38   | 0.341              | 0.380                                      |
| Chronic Hazard Index <sup>2</sup>       | 0.426                         | 0.202  | 0.0128             | 0.047 (annual)<br>0.0187 (8-hour)          |
| Acute Hazard Index                      | 1.08                          | 0.498  | 0.012              | 0.218                                      |
| Cancer Burden <sup>3</sup>              | 0.00285                       |  |                    |  |

Notes:

1. Cancer risk is based on a 30-year exposure for PMI, MEIR, and sensitive receptors and a 25-year exposure for the MEIW.
2. The chronic hazard index at the MEIW was estimated on an annual and 8-hour basis.
3. Cancer burden is estimated at all census receptors with 70-year cancer risk greater than one in a million.
4. The locations of each health risk may not occur at the same receptor. Detailed location information is provided in subsequent tables.

| Pollutant           | CAS No.  | Crematory (000240)         |                                  | Crematory (000241)         |                                  | Crematory (921554)         |                                  |
|---------------------|----------|----------------------------|----------------------------------|----------------------------|----------------------------------|----------------------------|----------------------------------|
|                     |          | Annual Emissions (lb/year) | Maximum Hourly Emissions (lb/hr) | Annual Emissions (lb/year) | Maximum Hourly Emissions (lb/hr) | Annual Emissions (lb/year) | Maximum Hourly Emissions (lb/hr) |
| Acetaldehyde        | 75070    | 1.210E-01                  | 5.625E-05                        | 1.210E-01                  | 5.625E-05                        | 2.420E-01                  | 7.500E-05                        |
| Arsenic (inorganic) | 7440382  | 4.677E-02                  | 2.175E-05                        | 4.677E-02                  | 2.175E-05                        | 9.359E-02                  | 2.900E-05                        |
| Benzene             | 7440417  | 5.806E-02                  | 2.700E-05                        | 5.806E-02                  | 2.700E-05                        | 1.162E-01                  | 3.600E-05                        |
| Beryllium           | 7440439  | 1.613E-03                  | 7.500E-07                        | 1.613E-03                  | 7.500E-07                        | 3.227E-03                  | 1.000E-06                        |
| Cadmium             | 18540299 | 1.290E-02                  | 6.000E-06                        | 1.290E-02                  | 6.000E-06                        | 2.582E-02                  | 8.000E-06                        |
| Cr(VI)              | 7440473  | 1.532E-02                  | 7.125E-06                        | 1.532E-02                  | 7.125E-06                        | 3.066E-02                  | 9.500E-06                        |
| Chromium            | 7440508  | 2.580E-02                  | 1.200E-05                        | 2.580E-02                  | 1.200E-05                        | 5.164E-02                  | 1.600E-05                        |
| Copper              | 50000    | 3.226E-02                  | 1.500E-05                        | 3.226E-02                  | 1.500E-05                        | 6.454E-02                  | 2.000E-05                        |
| Formaldehyde        | 7647010  | 3.226E-02                  | 1.500E-05                        | 3.226E-02                  | 1.500E-05                        | 6.454E-02                  | 2.000E-05                        |
| HCl                 | 7664393  | 6.935E+01                  | 3.225E-02                        | 6.935E+01                  | 3.225E-02                        | 1.388E+02                  | 4.300E-02                        |
| HF                  | 7439921  | 6.290E-01                  | 2.925E-04                        | 6.290E-01                  | 2.925E-04                        | 1.259E+00                  | 3.900E-04                        |
| Lead                | 7440020  | 7.903E-02                  | 3.675E-05                        | 7.903E-02                  | 3.675E-05                        | 1.581E-01                  | 4.900E-05                        |

|   |         |           |           |           |           |           |           |
|---|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| (inorganic)                                   |         |           |           |           |           |           |           |
| Nickel  | 1151    | 4.596E-02 | 2.138E-05 | 4.596E-02 | 2.138E-05 | 9.198E-02 | 2.850E-05 |
| PAHs, total, w/o individ. components reported | 7782492 | 4.193E-03 | 1.950E-06 | 4.193E-03 | 1.950E-06 | 8.391E-03 | 2.600E-06 |
| Selenium                                      | 7440666 | 5.242E-02 | 2.438E-05 | 5.242E-02 | 2.438E-05 | 1.049E-01 | 3.250E-05 |
| Toluene                                       | 7439976 | 7.983E-01 | 3.713E-04 | 7.983E-01 | 3.713E-04 | 1.597E+00 | 4.950E-04 |
| Xylenes (mixed)                               | 71432   | 2.258E-01 | 1.050E-04 | 2.258E-01 | 1.050E-04 | 4.518E-01 | 1.400E-04 |
| Zinc  | 108883  | 4.193E-02 | 1.950E-05 | 4.193E-02 | 1.950E-05 | 8.391E-02 | 2.600E-05 |
| Mercury                                       | 1330207 | 1.372E+00 | 1.361E-03 | 1.372E+00 | 1.361E-03 | 2.746E+00 | 1.361E-03 |

DEQ determined that the risks estimated in the risk assessment for the Cremation Units 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 less than 1.0 as required to demonstrate compliance with the negligible risk requirement.

## VII. Environmental Assessment

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



**FINAL ENVIRONMENTAL ASSESSMENT**

**Hillcrest Lawn Memorial**

**09/12/2024**

**Air Quality Bureau**

**Air, Energy, and Mining Division**

**Montana Department of Environmental Quality**

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## Project Overview

COMPANY NAME: Hillcrest Lawn Memorial  
EA DATE: August 7, 2024  
SITE NAME: Hillcrest Lawn Memorial, Great Falls, MT  
MAQP#: 4058-01  
Application Received Date: July 1, 2024

## Location

The Hillcrest facility is located at 1410 – 13th Street South, Great Falls, Montana. The Legal Description of the site is in Section 13, Township 20 North, Range 3 East, Cascade County, Montana.

PROPERTY OWNERSHIP: FEDERAL      STATE      PRIVATE X

## Compliance with the Montana Environmental Policy Act

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The proposed action is considered to be a state action that may have an impact on the human environment and, therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This Environmental Assessment (EA) will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608. DEQ may not withhold, deny, or impose conditions on the Permit based on the information contained in this EA (§ 75-1- 201(4), MCA).

## Proposed Action

Hillcrest Lawn Memorial has applied for a Montana Air Quality permit modification under the Clean Air Act of Montana to remove an old crematory and install a new crematory to their facility. The state law that regulates air quality permitting in Montana is the Clean Air Act of Montana, §§ 75-2-101, et seq., (CAA) Montana Code Annotated (MCA). DEQ may not approve a proposed project contained in an application for an air quality permit unless the project complies with the requirements set forth in the CAA of Montana and the administrative rules adopted thereunder, ARMs 17.8.101 et. seq. The proposed action would be located on privately owned land, in Great Falls, Cascade County, Montana. All information included in this EA is derived from the permit application, discussions with the applicant, analysis of aerial photography, topographic maps, and other research tools.

## Purpose and Need

Under MEPA, Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The Proposed Action is considered to be a state action that may have an impact on the human environment and, therefore, DEQ must prepare an environmental review. This EA will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in ARM 17.4.608.



**TABLE 1: SUMMARY OF ACTIVITIES PROPOSED IN APPLICATION**

| <b>Table 1. Summary of Proposed Activities in Application</b> |   |
|---|---|
| <b>General Overview</b>                                       | To remove an old, less efficient crematory unit, and install a new, more efficient crematory unit in the existing facility.   |
| <b>Duration and Timing</b>                                    | Construction: Installation of the new crematory was completed in January 2024.<br>Operation: This unit may operate as designated in MAQP #4058-01.  |
| <b>Estimated Disturbance</b>                                  | There would be no disturbance to the existing land as the new crematory unit has been installed into an existing building on the existing Hillcrest Lawn Memorial site.   |
| <b>Equipment</b>  | Replacing an old crematory unit with a new, more efficient crematory unit.  |
| <b>Location</b>   | The crematory would be located on the existing Hillcrest Lawn Memorial site, inside an existing building which is identified The Hillcrest facility is located at 1410 – 13th Street South, Great Falls, Montana. The Legal Description of the site is in Section 13, Township 20 North, Range 3 East, Cascade County, Montana. |
| <b>Personnel on-site</b>                                      | Construction: This has already been completed.<br>Operation: Existing staff would operate the equipment on an as needed basis.  |
| <b>Location and Analysis Area</b>                             | The analysis area for this permit action is the area shown in Figure 1.   |
| <b>Air Quality</b>  | The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to air quality.   |
| <b>Water Quality</b>  | This project would not affect water quality. The Applicant would be required to comply with the applicable local, county, state, and federal requirements pertaining to water quality.  |
| <b>Erosion Control and Sediment Transport</b>                 | This project is on property currently in use for industrial purposes, and it would not contribute to additional erosion or sediment transport. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to erosion control and sediment transport.                     |
| <b>Solid Waste</b>  | This project would have no effect on solid waste in the area. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to solid waste.   |

|                             |  |
|-----------------------------|--|
| <b>Cultural resources</b>   | The property is already in use as industrial property, and there would be no effects on cultural resources. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to cultural resources. |
| <b>Aesthetics</b>           | The property is already in use as industrial property, and there would be no effects on aesthetics.<br><br>The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to aesthetics.          |
| <b>Hazardous Substances</b> | This project does not contribute any new hazardous substances to the facility. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to hazardous substances.                            |
| <b>Weed Control</b>         | The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to weed control.   |
| <b>Reclamation Plans</b>    | The property is already in use as industrial property, so no reclamation is necessary.   |

| <b>Cumulative Impact Considerations</b> |  |
|---|--|
| <b>Past Actions</b>                     | The most recent air quality permitting action at Hillcrest Lawn Memorial was to issue the original Montana Air Quality Permit. |
| <b>Present Actions</b>                  | This is the only Montana Air Quality Permit action in the immediate vicinity at the current time.                              |
| <b>Related Future Actions</b>           | DEQ is unaware of any applications submitted to DEQ in the analysis area and near the Hillcrest Lawn Memorial facility.        |



Figure 1. Existing building in which the new crematory unit is located.





## EVALUATION OF AFFECTED ENVIRONMENT AND IMPACT BY RESOURCE:

The impact analysis will identify and evaluate whether the impacts are direct or secondary impacts to the physical environment and human population in the area to be affected by the proposed project. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action (ARM 17.4.603(18)). Where impacts would occur, the impacts will be described.

Cumulative impacts are the collective impacts on the human environment within the borders of Montana that could result from the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future impacts must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. The activities identified in Table 1 were analyzed as part of the cumulative impacts assessment for each resource.

The duration is quantified as follows:

- Construction Impacts (short-term): These are impacts to the environment during the construction period. The construction period of this project is already completed.
- Operation Impacts (long-term): These are impacts to the environment during the operational period. When analyzing duration, please include a specific range of time.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource.

## 1. Geology and Soil Quality, Stability, and Moisture

The Applicant has completed this project on property within the boundaries of the existing building on the Hillcrest Lawn Memorial property. The location is within the existing building on the property already operated as the Hillcrest Lawn Memorial crematory facility, in the city of Great Falls, Montana.

### ***Direct Impacts:***

The proposed project is on land currently used for purposes required for the operation of the Hillcrest Lawn Memorial crematory Facility. It would be considered industrial use property. There are no known direct impacts on the geology and soil.

### ***Secondary Impacts:***

There are no predicted secondary impacts to geology and soil associated with this project.

### ***Cumulative Impacts:***

Since there are no direct or secondary impacts, there are also no cumulative impacts to geology and soil anticipated from this project.

## 2. Water Quality, Quantity, and Distribution

This project would not impact any surface or groundwater in the area. The project is proposed on property that is already under use for industrial operations, and it would not impact the surrounding property.

### ***Direct Impacts:***

There are no direct impacts expected to water quality, quantity, and distribution from this project.

### ***Secondary Impacts:***

There are no secondary impacts expected to water quality, quantity, and distribution from this project.

### ***Cumulative Impacts:***

There are no cumulative impacts expected to water quality, quantity, and distribution from this project.

## 3. Air Quality

Applicants are required to comply with all laws relating to air, such as the Federal Clean Air Act, National Ambient Air Quality Standards set by the Environmental Protection Agency (EPA), and the Clean Air Act of Montana. In addition, the MAQP #4058-01 permit requires that the Applicant limit the emissions of the crematory unit.

### ***Direct Impacts:***

The air quality impacts would be minor for this project. The majority of pollutants from the proposed project would be particulate material and volatile organic compounds (VOC). This

would result in the release of these pollutants in minor amounts, but in lower amounts than those of the previous crematory unit.

The potential overall change in emissions with the new cremation unit has already occurred, and this permit action will not increase those emissions any further.

**Secondary Impacts:** There are no additional secondary impacts to air quality associated with this project.

**Cumulative Impacts:**

Cumulative impacts to air quality would be negligible based on the improved efficiency of this new cremation unit.

#### 4. Vegetation Cover, Quantity, and Quality

There are no known rare or sensitive plants or cover types present within the proposed analysis area. No known fragile or unique resources or values, or resources of statewide or societal importance, are present within the proposed analysis area. The property is already in use for industrial purposes. The new cremation unit has already been installed within the existing building.

**Direct Impacts:**

Since the property is already used for industrial purposes, there would be no additional impacts to vegetation.

**Secondary Impacts:**

No secondary impacts to vegetation are expected as a result of this project.

**Cumulative Impacts:**

No cumulative impacts to vegetation are expected as a result of this project.

#### 5. Terrestrial, Avian, and Aquatic Life and Habitats

The project is proposed on property that is currently in use as industrial property. There are no additional impacts to terrestrial, avian, or aquatic life habitats on the property in question.

**Direct Impacts:**

There are no direct impacts expected to terrestrial, avian, or aquatic life habitats from this project on these habitats.

**Secondary Impacts:**

No secondary impacts to terrestrial, avian and aquatic life and habitats would be expected.

**Cumulative Impacts:**

There are no cumulative impacts to terrestrial, avian, or aquatic life habitats expected from this project.

## 6. Unique, Endangered, Fragile, or Limited Environmental Resources

There are no unique, endangered, fragile, or limited environmental resources in the area, as this location has been used for industrial purposes previously. The proposed project is not in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: <http://sagegrouse.mt.gov>. Impacts to sage grouse would not be expected.

### ***Direct Impacts:***

The Sage Grouse Habitat Conservation Program has stated that the proposed project would not occur in core, general or connectivity sage grouse habitat. Therefore, impacts to sage grouse and other environmental resources would not occur.

### ***Secondary Impacts:***

No secondary impacts to unique, endangered, fragile, or limited environmental resources, or to sage grouse or sage grouse habitat would be expected as this site is not in sage grouse habitat.

### ***Cumulative Impacts:***

No cumulative impacts to unique, endangered, fragile, or limited environmental resources would be expected.

## 7. Historical and Archaeological Sites

This project is proposed on land that is currently part of the Hillcrest Lawn Memorial operation and is industrial in nature. No additional impacts to history, culture, and archeological uniqueness are expected.

No underground disturbance would be required for the proposed action as the cremation unit is located in an existing building on an existing industrial site.

### ***Direct Impacts:***

No direct impacts to historical and archeological sites are expected from this project.

### ***Secondary Impacts:***

No secondary impacts to historical and archeological sites are anticipated.

### ***Cumulative Impacts:***

No cumulative impacts to historical and archeological sites would be expected.

## 8. Aesthetics

The site is located in an area on Hillcrest Lawn Memorial property which is industrial in nature, and within an existing building, so no aesthetic impacts are anticipated off the Hillcrest property.

### ***Direct Impacts:***

No direct impacts to aesthetics are expected as a result of this project.

**Secondary Impacts:**

No secondary impacts to aesthetics are anticipated.

**Cumulative Impacts:**

No cumulative impacts to aesthetics would be expected from this project.

**9. Demands on Environmental Resources of Land, Water, Air, or Energy**

There are no expected impacts to the demands on environmental resources of land, water, air, or energy resulting from this project. The Applicant is required to comply with all applicable federal, state, county, and local regulations and ordinances, permits, licenses, and approvals for the operation of the site, and therefore the impacts are limited by the permit requirements listed in MAQP #4058-01.

**Direct Impacts:**

Based on the analysis of available data and certifications made by the Applicant, DEQ does not foresee any unusual or excessive demands on land, water, air, or energy from this project. Therefore, limited direct impacts would be anticipated.

**Secondary Impacts:**

No secondary impacts to demands on environmental resources of land, water, air, or energy would be anticipated.

**Cumulative Impacts:**

No cumulative impacts to demands on environmental resources of land, water, air, or energy would be expected.

**10. Impacts on Other Environmental Resources**

The site is currently being utilized on private property for existing industrial purposes. No impacts to other environmental resources are anticipated.

**Direct Impacts:**

Based on the analysis of available data and on the certifications made by the Applicant, DEQ does not foresee any impacts on other environmental resources from this project. Therefore, no direct impacts are anticipated.

**Secondary Impacts:**

No secondary impacts to other environmental resources are anticipated as a result of the proposed project.

**Cumulative Impacts:**

No cumulative impacts to other environmental resources would be expected.



## 11. Human Health and Safety

The cremation unit that is installed must comply with the permit conditions included in MAQP #4058-01, which are protective of human health and safety. Since the new cremation unit is within the current Hillcrest Lawn Memorial property boundary, and located in an existing building, the project would not disturb any offsite properties.

### ***Direct Impacts:***

Direct impacts to human health and safety are expected to be negligible for this project.

### ***Secondary Impacts:***

No secondary impacts to human health and safety are expected as a result of this project.

### ***Cumulative Impacts:***

Negligible cumulative impacts to human health and safety are expected from this project.

## 12. Industrial, Commercial, and Agricultural Activities and Production

This proposed project area has been in use as industrial property for many years, and it is anticipated that there will be no additional impacts to industrial, commercial, and agricultural activities from this project.

### ***Direct Impacts:***

There are no anticipated direct impacts to industrial, commercial, or agricultural activities as a result of this project.

### ***Secondary Impacts:***

No secondary impacts to industrial, commercial, and agricultural activities and production would be expected.

### ***Cumulative Impacts:***

No cumulative impacts to industrial, commercial, and agricultural activities are expected as a result of this project.

## 13. Quantity and Distribution of Employment

Existing employees would be utilized for this operation.

### ***Direct Impacts:***

No direct impacts are expected to the quantity and distribution of employment due to this project.

### ***Secondary Impacts:***

No secondary impacts to quantity and distribution of employment are anticipated as a result of this project.

***Cumulative Impacts:***

No cumulative impacts to the quantity and distribution of employment would be expected.

## **14. Local and State Tax Base and Tax Revenues**

No impact is anticipated to local and state tax base or tax revenues due to the replacement of the cremation unit at the Hillcrest facility.

***Direct Impacts:***

No direct impacts to the tax base or revenues are anticipated as a result of this project.

***Secondary Impacts:***

No secondary impacts to local and state tax base and tax revenues would be expected.

***Cumulative Impacts:***

No cumulative impacts to local and state tax base and tax revenues would be expected.

## **15. Demand for Government Services**

The proposed project would remove an old cremation unit and install a new, replacement cremation unit, and this equipment would become part of ongoing equipment regulated by entities such as DEQ.

***Direct Impacts:***

Negligible direct impacts to demand for government services would be expected as a result of regulating the additional equipment associated with this project.

***Secondary Impacts:***

No secondary impacts to government services are anticipated as a result of the proposed project.

***Cumulative Impacts:***

No cumulative impacts to government services are anticipated as a result of this project.

## **16. Locally Adopted Environmental Plans and Goals**

The proposed operation would occur within Cascade County, within the City of Great Falls. The project would be required to comply with city and county zoning regulations that may have authority in the area.

DEQ is not aware of any additional policies and plans.

***Direct Impacts:***

DEQ is not aware of any other locally adopted environmental plans or goals that would be impacted by this proposed project or in the project area. Impacts from or to locally adopted environmental plans and goals would not be expected as a result of this project.

**Secondary Impacts:**

No secondary impacts to locally adopted environmental plans and goals are anticipated as a result of the proposed work.

**Cumulative Impacts:**

No cumulative impacts to locally adopted environmental plans and goals would be expected.

**17. Access to and Quality of Recreational and Wilderness Activities**

The proposed project would not limit access to wilderness or recreational areas nearby. The proposed activities would occur on private land already in use as an industrial manufacturing facility. This facility is located within the city of Great Falls.

**Direct Impacts:**

Based on the information provided by the Applicant and DEQ’s review of the surrounding area, DEQ does not anticipate that any wilderness or recreational areas would be impacted by the proposed project. Access to wilderness or recreation areas is not an issue at this site.

**Secondary Impacts:**

No secondary impacts to access to, and quality of wilderness or recreational activities are anticipated.

**Cumulative Impacts:**

No cumulative impacts to access to, and quality of, recreational and wilderness activities would be expected.

**18. Density and Distribution of Population and Housing**

The proposed project is not expected to add or remove any housing in the area.

**Direct Impacts:**

It is unlikely this project would add to the population significantly. No direct impacts are anticipated.

**Secondary Impacts:**

No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed project.

**Cumulative Impacts:**

No cumulative impacts to density and distribution of population and housing are anticipated as a result of this project.

**19. Social Structures and Mores**

DEQ is not aware of any native cultural concerns that would be affected by the proposed activity. Based on the information provided by the Applicant, it is not anticipated that this project would disrupt traditional lifestyles or communities.

***Direct Impacts:***

No direct impacts to social structures and mores are anticipated as a result of the proposed project.

***Secondary Impacts:***

No secondary impacts to social structures and mores are anticipated as a result of the proposed project.

***Cumulative Impacts:***

No cumulative impacts to social structures and mores would be expected.

## **20. Cultural Uniqueness and Diversity**

Based on the information provided by the Applicant, DEQ is not aware of any unique qualities of the area that would be affected by the proposed activity. The site is currently located on land in industrial use.

It is not anticipated that this project would cause a shift in some unique quality of the area.

***Direct Impacts:***

No impacts to cultural uniqueness and diversity are anticipated from this project.

***Secondary Impacts:***

No secondary impacts to cultural uniqueness and diversity are anticipated as a result of the proposed project.

***Cumulative Impacts:***

No cumulative impacts to cultural uniqueness and diversity would be expected.

## 21. Private Property Impacts

As required by 2-10-105, MCA, the DEQ conducted the following private property taking and damaging assessment.

| YES | NO |   |
|-----|----|---|
| X   |    | 1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?   |
|     | X  | 2. Does the action result in either a permanent or indefinite physical occupation of private property?  |
|     | X  | 3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)  |
|     | X  | 4. Does the action deprive the owner of all economically viable uses of the property?   |
|     | X  | 5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].  |
|     |    | 5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?   |
|     |    | 5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?   |
|     | X  | 6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)  |
|     | X  | 7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?   |
|     | X  | 7a. Is the impact of government action direct, peculiar, and significant?   |
|     | X  | 7b. Has government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?  |
|     | X  | 7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?   |
|     | X  | Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas) |

The proposed project would take place on private land. DEQ's approval of MAQP #4058-01 permit would not affect the applicant's real property. DEQ has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #4058-01 would not have private property-taking or damaging implications.

## 22. Other Appropriate Social and Economic Circumstances

Due to the nature and scope of the proposed project activities, no further direct or secondary impacts would be anticipated from this project.

## 23. Greenhouse Gas (GHG) Assessment

Issuance of this permit would authorize the replacement of an older cremation unit with a new, more efficient cremation unit at Hillcrest Lawn Memorial.

The analysis area for this resource is limited to the activities regulated by the issuance of MAQP #4058-01 permit which is for the removal of an old cremation unit, and the installation of a new, more efficient cremation unit.

For the purpose of this analysis, DEQ has defined greenhouse gas emissions as the following gas species: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and many species of fluorinated compounds. The range of fluorinated compounds includes numerous chemicals which are used in many household and industrial products. Other pollutants can have some properties that also are similar to those mentioned above, but the EPA has clearly identified the species above as the primary Greenhouse Gases (GHGs). Water vapor is also technically a greenhouse gas, but its properties are controlled by the temperature and pressure within the atmosphere, and it is not considered an anthropogenic species.

### ***Direct Impacts***

Operation of the cremation unit will not result in an increase of the release of GHGs, and therefore there is no direct impact associated with this project. The GHG emissions from this unit would keep the facility at the same level. This specific cremation unit would emit 9.28577E-08 metric tons per year of CO<sub>2</sub>e.

### ***Secondary Impacts***

GHG emissions contribute to changes in atmospheric radiative forcing, resulting in climate change impacts. GHGs act to contain solar energy loss by trapping longer wave radiation emitted from the Earth's surface and act as a positive radiative forcing component (BLM 2021). The impacts of climate change throughout the Northern Great Plains of Montana include changes in flooding and drought, rising temperatures, and the spread of invasive species (BLM 2021). However, this project will produce no additional GHGs within Montana.

### ***Cumulative Impacts***

Montana recently used the EPA State Inventory Tool (SIT) to develop a greenhouse gas inventory in conjunction with preparation of a possible grant application for the Community Planning Reduction Grant (CPRG) program. This tool was developed by EPA to help states develop their own greenhouse gas inventories, and this relies upon data already collected by the federal government through various agencies. The inventory specifically deals with carbon dioxide, methane, and nitrous oxide and reports the total as CO<sub>2</sub>e. The SIT consists of eleven Excel based modules with pre-populated data that can be used as default settings or in some cases, allows states to input their own data when the state believes their own data provides a higher level of quality and accuracy. Once each of the eleven modules is filled out, the data from each module is exported into a final "synthesis" module which summarizes all

of the data into a single file. Within the synthesis file, several worksheets display the output data in a number of formats such as emissions by sector and emissions by type of greenhouse gas.

DEQ has determined the use of the default data provides a reasonable representation of the greenhouse gas inventory for the various sectors of the state, and an estimated annual greenhouse gas inventory by year. The SIT data is currently only updated through the year 2021, as it takes several years to validate and make new data available within revised modules.

Future GHG emissions from operations such as this site would be represented within the following subcategories: Industrial Sector. At present, the Industrial Sector accounts for 4.4 MMTCO<sub>2</sub>e in Montana annually. This project will contribute 0.00000092577 metric tons per year of CO<sub>2</sub>e or roughly 0.000 percent of the Industrial Sector total. If the project were to last 20 years, the GHGs over the life of the project would be 0.000 metric tons. Comparison to the statewide GHG total for the project on an annual basis (2021) would be only 0.00000 percent.

## **PROPOSED ACTION ALTERNATIVES**

No Action Alternative: In addition to the proposed action, DEQ must also considered a "no action" alternative. The "no action" alternative would deny the approval of MAQP #4058-01. The applicant would lack the authority to conduct the proposed activity. Any potential impacts that would result from the proposed action would not occur. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

If the Applicant demonstrates compliance with all applicable rules and regulations required for approval, the "no action" alternative would not be appropriate.

Other Reasonable Alternative(s): No other alternatives were considered.

## **CONSULTATION**

DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by DEQ staff. External scoping efforts also included queries to the following websites/databases/personnel:

MAQP #4058-00, MAQP #4058-01 Application, EPA State Inventory Tool, and the EPA GHG Calculator Tool.

## **PUBLIC INVOLVEMENT**

The public comment period for this permit action is from 8/7/2024 through 9/9/2024. Public comments may be submitted to the DEQ through the DEQ website, email, written letter, or in person.

## **OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION**

The proposed project would be located on property owned by Hillcrest Lawn Memorial. All applicable local, state, and federal rules must be adhered to, which, at some level, may also include other state, or federal agency jurisdiction.

## **NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS**

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in ARM 17.4.608, which are as follows:

- The severity, duration, geographic extent, and frequency of the occurrence of the impact;
- The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts – identify the parameters of the proposed action;
- The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
- The importance to the state and to society of each environmental resource or value that would be affected.
- Any precedent that would be set as a result of an impact of the proposed action that would commit the DEQ to future actions with significant impacts or a decision in principle about such future actions; and
- Potential conflict with local, state, or federal laws, requirements, or formal plans.

## **CONCLUSIONS AND FINDINGS**

The DEQ finds that this action results in negligible impacts to air quality and GHG emissions in Cascade County, Montana.

The severity, duration, geographic extent, and frequency of the occurrence of the impacts associated with the proposed air quality project would be limited. The proposed action would result in no disturbance on the existing industrial property of Hillcrest Lawn Memorial. The Applicant is proposing to remove an old cremation unit and install a new cremation unit at the site as explained in MAQP #4058-01 to increase the efficiency in the cremation facility. The site would be permitted to operate the crematory under the limits listed within MAQP 4058-01. The site where the cremation unit is located is within the existing property, and within an existing building on the Hillcrest Lawn Memorial site.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed actions for any environmental resource. DEQ does not believe that the proposed activities by the Applicant would have any growth-inducing or growth-inhibiting aspects, or contribution to cumulative impacts. The proposed site does not appear to contain known unique or fragile resources.

There are no unique or known endangered fragile resources in the project area. No underground disturbance would be required for this project.



There would be no impacts to view-shed aesthetics as the cremation operation would be within an existing building already on the site.

Demands on the environmental resources of land, water, air, or energy would not be significant.

Impacts to human health and safety would not be significant.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed activities on any environmental resource.

Issuance of a Montana Air Quality Permit to the Applicant does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the Applicant submits another modification or amendment, DEQ is not committed to issuing those revisions. DEQ would conduct an environmental review for any subsequent permit modifications sought by the Applicant that require environmental review. DEQ would make permitting decisions based on the criteria set forth in the Clean Air Act of Montana.

Issuance of the Permit to the Applicant does not set a precedent for DEQ's review of other applications for Permits, including the level of environmental review. The level of environmental review decision is made based on case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed air quality permitting action by the Applicant would have any growth-inducing or growth inhibiting impacts that would conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed operation is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of environmental review for MEPA.

## **PREPARATION AND APPROVAL**

**EA prepared by:**

**Troy M Burrows**  
Air Quality Scientist

**Approved by: Craig Henrikson**

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## REFERENCES

- MAQP #4058-00
- MAQP #4058-01 Application received from Hillcrest Lawn Memorial on June 17, 2024.
- Additional Hillcrest Lawn Memorial Email Correspondence received on July 1, 2024.
- EPA GHG Calculator Tool <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool>. Version dated May 2023 in the Introduction Tab.
- EPA State Inventory Tool, <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool> Version 2024.1.
- Results of State Inventory Tool model run for Version 2024.1. Model results run by AQB staff on May 7, 2024.
- 2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends, <https://www.blm.gov/>