



August 31, 2020

Keith Schnider.
1008 21st Ave. South
Great Falls, MT 59405

Dear Mr. Schnider:

Montana Air Quality Permit #5244-00 is deemed final as of August 29, 2020, by the Department of Environmental Quality (Department). All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

Conditions: See attached.

A handwritten signature in black ink that reads "Julie A. Merkel".

Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

A handwritten signature in black ink that reads "Craig Henrikson".

Craig Henrikson P.E.
Environmental Engineer
Air Quality Bureau
(406) 444-6711

JM:CH
Enclosures

Montana Department of Environmental Quality
Air, Energy & Mining Division

Montana Air Quality Permit #5244-00

Keith Schnider.
1008 21st Ave. South
Great Falls, MT 59405

August 29, 2020



MONTANA AIR QUALITY PERMIT

Issued to: Keith Schnider
1008 21st Ave. South
Great Falls, MT 59405

MAQP #5244-00
Application Complete: 07/09/2020
Preliminary Determination: 7/13/2020
Decision Issued: 08/13/2020
Permit Final: 08/29/2020

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Keith Schnider (KS), pursuant to Sections 75-2-204, 211, and 215, 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 facility is located in Section 13, Township 20 North, Range 3 East, in Cascade County, Montana. The physical address is 1008 21st Avenue South, Great Falls, 59405. A complete description of the permitted equipment is contained in Section I.A of the permit analysis.

B. Current Permit Action

On April 8, 2020, the Montana Department of Environmental Quality (Department) received a permit application for an animal crematorium into an existing building in Great Falls. The crematorium previously was operated in Kalispell, Montana and was relocated to Great Falls to be operated as a pet crematorium. The unit is a Crawford Model C1000P (or equivalent) rated for 200 lbs/hr and is identified in the permit as "Unit #1". Additional information was received on May 11, 2020, June 2, 2020, and an application check was received on July 9, 2020.

SECTION II: Limitations and Conditions

A. Operational Requirements

1. KS shall not incinerate/cremate any material other than animal remains, and any corresponding animal remains container, unless otherwise approved by the Department. KS shall provide written notice to the Department and obtain approval from the Department if material other than what would normally be termed, animal remains, and/or animal remains container is to be incinerated (ARM 17.8.749).
2. Unit #1 shall be equipped with a burner for the primary chamber and a separate burner for the secondary chamber. The system shall 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. The secondary chamber operating temperature

of the crematoriums 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. KS shall operate unit #1 as specified in this Air Quality Permit #5244-00. Further, KS shall develop crematorium operation procedures, print those procedures in a crematorium operation procedures manual and require all personnel who operate the crematorium to familiarize themselves with the operating procedures. A copy of this manual shall be supplied to the Department, upon request (ARM 17.8.752).

B. Emission Limitations

KS shall not cause or authorize to be discharged into the atmosphere from unit #1:

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 gr/dscf, corrected to 12% CO₂ (ARM 17.8.752).

C. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. The Department may require testing (ARM 17.8.105).

D. Monitoring Requirements

KS shall install, calibrate, maintain, and operate continuous monitoring and recording equipment, or use another measurement/recording system as may be approved by the Department, on unit #1 to measure the secondary chamber exit gas temperature. KS shall also record the daily quantity of material incinerated/cremated and the daily hours of operation of the crematorium (ARM 17.8.749).

E. Operational Reporting Requirement

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

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

2. KS shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, 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. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

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

F. Notification

KS shall provide the Department written notification of the actual start-up date of unit #1, within 15 days after the actual start-up date.

SECTION III: General Conditions

- A. Inspection – KS shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as continuous emission monitoring systems (CEMS) or continuous emission rate monitoring systems (CERMS), 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 KS fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving KS of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA.

The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection, by the Department, at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by KS 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 three 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 (MAQP) Analysis
Keith Schnider
MAQP #5244-00

I. Introduction

A. Permitted Equipment

Keith Schnider (KS) proposes to operate a Crawford Model C1000P animal crematory (Unit #1) - a maximum burn rate of 200 pounds per hour (lbs/hr). The facility is located in Section 13, Township 20 North, Range 3 East, in Cascade County, Montana. The physical address is 1008 21st Avenue South, Great Falls, 59405.

B. Source Description

Unit #1 shall incorporate both a primary and secondary combustion chamber and will be fired by natural gas. The unit will be used to incinerate animal remains.

C. Current Permit Action

On April 8, 2020, the Montana Department of Environmental Quality (Department) received a permit application for an animal crematorium into an existing building in Great Falls. The crematorium previously operated in Kalispell, Montana, and was relocated to Great Falls to be operated as a pet crematorium. The unit is a Crawford C1000P (or equivalent) rated for 200 lbs/hr.

D. Response to Public Comments (If received)

Person/Group Commenting	Permit Reference	Comment	Department Response

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

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 ARM and are available, upon request, from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

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

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

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

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than four 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 PM10
11. ARM 17.8.230 Fluoride in Forage

KS must maintain compliance with all applicable ambient air quality standards. As part of the risk assessment required for this project, the Department conducted Screen modeling, an EPA-approved air dispersion model. This analysis demonstrated that the proposed project would present a negligible risk to human health from the emissions of hazardous air pollutants (HAP).

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

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, KS shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
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 (gr/dscf) of dry flue gas, adjusted to 12% carbon dioxide (CO₂) and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator, emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes. This rule does not apply to the crematorium because KS has applied for and received an air quality permit in accordance with ARM 17.8.770 and MCA 75-2-215.
6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS).

This facility is not an NSPS affected source because it does not meet the definition of an affected facility under any NSPS subpart defined in 40 CFR 60.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. KS submitted the appropriate permit application fee for the current permit action.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that 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 person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year (tpy) of any pollutant. KS does not have a PTE greater than 25 tpy of any pollutant; however, in accordance with MCA 75-2-215, an air quality permit is required for all incinerators, regardless of potential incinerator emissions. Because KS 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. The current permit action was accomplished in accordance with the provisions of ARM 17.8.745(2).
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, modification, or use of a source. KS 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. KS submitted an affidavit of publication of public notice for the June 4, 2020, issue of the *Cascade Courier*, a newspaper of general circulation in the city of Cascade 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 the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that Best Available Control Technology (BACT) shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving KS of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the

preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
 12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
 13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
 14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.
 15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, MCA.
- F. ARM 17.8, Subchapter 8, Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the Federal Clean Air Act (FCAA) that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year (tpy) 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 tpy of any pollutant;
 - b. PTE > 10 tpy of any one Hazardous Air Pollutant (HAP), PTE > 25 tpy of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tpy of PM₁₀ in a serious PM₁₀ 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 Montana Air Quality Permit #5244-00 for KS, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any criteria 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 PM₁₀ nonattainment area.
 - d. This facility is not subject to any current NSPS.
 - e. This facility is not subject to any current NESHAP.
 - f. This source is not a Title IV affected source, nor a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that KS is 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, KS must obtain an air quality permit.
2. MCA 75-2-215 requires the applicant to provide, to the Department's satisfaction, a characterization and estimate of emissions and ambient concentrations of air pollutants, including HAPs from the incineration of solid waste. The Department determined that the information submitted in this application is sufficient to fulfill this requirement.
3. MCA 75-2-215 requires that the Department reach a determination that the projected emissions and ambient concentrations constitute a negligible risk to public health, safety, and welfare. The Department completed a health risk assessment based on the emissions inventory and ambient air quality modeling for this proposal. Based on the results of the emission inventory, modeling, and the health risk assessment, the Department determined that KS's proposal complies with this requirement.
4. MCA 75-2-215 requires the application of pollution control equipment or procedures that meet or exceed BACT. The Department determined that the proposed incinerator constitutes BACT.

III. Best Available Control Technology Analysis

A BACT determination is required for each new or modified source. KS 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, not just criteria pollutants.

The Department reviewed other BACT analyses as part of this analysis. KS proposes to control the emissions from the incinerator with a secondary chamber designed specifically to reduce the amount of pollutants, including HAPs, emitted from the incinerator. With the estimated particulate matter (PM) emissions being 2.11 tons per year (tpy), the incremental cost per ton of additional PM 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 PM and to 10% opacity. Therefore, the Department determined that compliance with the PM and opacity emission limits, with no additional controls required, constitutes BACT for PM emissions from this source.

BACT for products of combustion (carbon monoxide (CO), nitrogen oxides (NO_x), Volatile Organic Compounds (VOCs)) and HAPs is good combustion including the requirement that the secondary chamber must be maintained at an operating temperature, which exceeds 1,500 degrees Fahrenheit (°F) on an hourly average with no single reading less than 1,400°F. The operating procedures and minimum temperature requirements contained in the permit will ensure good combustion and will constitute BACT for gaseous combustion emissions and HAPs from this source.

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

The Department developed a criteria pollutant emission inventory for the combined unit as summarized below.

Criteria Pollutant Emission Source	Emissions Tons/Year [PTE]							
	PM	PM ₁₀	PM _{2.5}	NO _x	CO	SO _x	VOC	Lead
Crematorium (Unit 1)	2.05	0.49	0.49	1.56	1.29	0.95	1.31	0.03
Natural Gas Combustion	0.07	0.07	0.07	0.86	0.72	0.01	0.05	0.00
TOTAL EMISSIONS >	2.11	0.56	0.56	2.42	2.01	0.96	1.36	0.03

The Department also developed a HAPs emission inventory for the incineration of animal remains) using those emission factors contained in FIRE (the EPA emission factor repository) under SCC 5-02-005-05, pathological incineration. The Department considered only those HAPs for which an emission factor was available and that have been analyzed for other permitted similar sources. The tables are broken into HAPs from natural gas combustion and for HAPs from combustion of the animal remains. This source uses propane but emission factors for natural gas are assumed equivalent to propane.

V. Air Quality Impacts

The Department conducted SCREEN View air dispersion modeling, an EPA-approved screening model., The Department used the indicated combustion rating along with the stack diameter, stack height, and expected discharge temperature to model for hazardous air pollutants from both the combustion of animal remains as well as from the combustion of natural gas. The combustion of natural gas and combined for the HAPs from combustion of the animal remains is shown in the Health Risk Assessment described below.

The unit was modeled in Screen.
05/26/20

16:45:17

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*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***
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C:\Lakes\KShnider.scr

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.274000E-03
 STACK HEIGHT (M) = 4.4958
 STK INSIDE DIAM (M) = 0.6096
 STK EXIT VELOCITY (M/S) = 7.8102
 STK GAS EXIT TEMP (K) = 699.8167
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 0.0000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
 VOLUME FLOW RATE = 2.2795041 (M**3/S)

BUOY. FLUX = 4.136 M**4/S**3; MOM. FLUX = 2.373 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

SIGMA	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	Z
0.94	1.	0.000	1	1.0	1.0	320.0	66.64	1.01	
4.72	100.	0.4665E-01	4	20.0	20.0	6400.0	6.25	8.24	
8.68	200.	0.3377E-01	4	10.0	10.0	3200.0	9.83	15.66	
12.29	300.	0.2496E-01	4	8.0	8.0	2560.0	11.62	22.72	
15.77	400.	0.2109E-01	4	4.5	4.5	1440.0	18.30	29.72	
18.99	500.	0.1810E-01	4	3.5	3.5	1120.0	22.25	36.50	

600.	0.1590E-01	4	3.0	3.0	960.0	25.21	43.13
22.02	NO						
700.	0.1411E-01	4	3.0	3.0	960.0	25.21	49.54
24.75	NO						
800.	0.1282E-01	4	2.5	2.5	800.0	29.35	56.03
27.71	NO						
900.	0.1162E-01	4	2.0	2.0	640.0	35.57	62.52
30.77	NO						
1000.	0.1078E-01	4	2.0	2.0	640.0	35.57	68.70
33.30	NO						
1100.	0.9936E-02	4	2.0	2.0	640.0	35.57	74.84
35.26	NO						
1200.	0.9172E-02	4	2.0	2.0	640.0	35.57	80.93
37.17	NO						
1300.	0.8951E-02	5	1.0	1.0	10000.0	52.21	66.12
28.93	NO						
1400.	0.9099E-02	6	1.0	1.0	10000.0	44.09	47.42
20.64	NO						
1500.	0.9532E-02	6	1.0	1.0	10000.0	44.09	50.32
21.29	NO						
1600.	0.9900E-02	6	1.0	1.0	10000.0	44.09	53.21
21.92	NO						
1700.	0.1021E-01	6	1.0	1.0	10000.0	44.09	56.09
22.56	NO						
1800.	0.1046E-01	6	1.0	1.0	10000.0	44.09	58.96
23.18	NO						
1900.	0.1066E-01	6	1.0	1.0	10000.0	44.09	61.82
23.80	NO						
2000.	0.1081E-01	6	1.0	1.0	10000.0	44.09	64.67
24.41	NO						
2100.	0.1084E-01	6	1.0	1.0	10000.0	44.09	67.51
24.93	NO						
2200.	0.1085E-01	6	1.0	1.0	10000.0	44.09	70.34
25.43	NO						
2300.	0.1084E-01	6	1.0	1.0	10000.0	44.09	73.16
25.94	NO						
2400.	0.1081E-01	6	1.0	1.0	10000.0	44.09	75.97
26.43	NO						
2500.	0.1076E-01	6	1.0	1.0	10000.0	44.09	78.76
26.92	NO						
2600.	0.1069E-01	6	1.0	1.0	10000.0	44.09	81.55
27.40	NO						
2700.	0.1062E-01	6	1.0	1.0	10000.0	44.09	84.33
27.87	NO						
2800.	0.1053E-01	6	1.0	1.0	10000.0	44.09	87.10
28.34	NO						
2900.	0.1044E-01	6	1.0	1.0	10000.0	44.09	89.86
28.80	NO						
3000.	0.1034E-01	6	1.0	1.0	10000.0	44.09	92.62
29.25	NO						

```

3500.  0.9666E-02   6   1.0   1.0 10000.0   44.09  106.26
31.11  NO
4000.  0.9011E-02   6   1.0   1.0 10000.0   44.09  119.70
32.85  NO
4500.  0.8399E-02   6   1.0   1.0 10000.0   44.09  132.98
34.48  NO
5000.  0.7836E-02   6   1.0   1.0 10000.0   44.09  146.11
36.03  NO

```

```

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND      1. M:
  91.  0.4727E-01   4   20.0   20.0 6400.0   6.25   7.63
4.39  NO

```

```

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

```

```

*****
*** SUMMARY OF SCREEN MODEL RESULTS ***
*****

```

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.4727E-01	91.	0.

17:05:27

```

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***

```

C:\Lakes\Schnider.scr

Natural Gas

SIMPLE TERRAIN INPUTS:

```

SOURCE TYPE           = POINT
EMISSION RATE (G/S)   = 0.467000E-03
STACK HEIGHT (M)      = 4.4958
STK INSIDE DIAM (M)   = 0.6096
STK EXIT VELOCITY (M/S) = 7.8102
STK GAS EXIT TEMP (K) = 699.8167
AMBIENT AIR TEMP (K)  = 293.0000
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION    = RURAL
BUILDING HEIGHT (M)   = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS
 ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
 VOLUME FLOW RATE = 2.2795041 (M**3/S)

BUOY. FLUX = 4.136 M**4/S**3; MOM. FLUX = 2.373 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING
 DISTANCES ***

DIST SIGMA (M)	CONC (UG/M**3) DWASH	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	Z
1.	0.000	1	1.0	1.0	320.0	66.64	1.01	
0.94	NO							
100.	0.7951E-01	4	20.0	20.0	6400.0	6.25	8.24	
4.72	NO							
200.	0.5756E-01	4	10.0	10.0	3200.0	9.83	15.66	
8.68	NO							
300.	0.4254E-01	4	8.0	8.0	2560.0	11.62	22.72	
12.29	NO							
400.	0.3594E-01	4	4.5	4.5	1440.0	18.30	29.72	
15.77	NO							
500.	0.3084E-01	4	3.5	3.5	1120.0	22.25	36.50	
18.99	NO							
600.	0.2710E-01	4	3.0	3.0	960.0	25.21	43.13	
22.02	NO							
700.	0.2406E-01	4	3.0	3.0	960.0	25.21	49.54	
24.75	NO							
800.	0.2186E-01	4	2.5	2.5	800.0	29.35	56.03	
27.71	NO							
900.	0.1981E-01	4	2.0	2.0	640.0	35.57	62.52	
30.77	NO							
1000.	0.1837E-01	4	2.0	2.0	640.0	35.57	68.70	
33.30	NO							
1100.	0.1694E-01	4	2.0	2.0	640.0	35.57	74.84	
35.26	NO							
1200.	0.1563E-01	4	2.0	2.0	640.0	35.57	80.93	
37.17	NO							
1300.	0.1526E-01	5	1.0	1.0	10000.0	52.21	66.12	
28.93	NO							
1400.	0.1551E-01	6	1.0	1.0	10000.0	44.09	47.42	
20.64	NO							

1500.	0.1625E-01	6	1.0	1.0	10000.0	44.09	50.32
21.29	NO						
1600.	0.1687E-01	6	1.0	1.0	10000.0	44.09	53.21
21.92	NO						
1700.	0.1740E-01	6	1.0	1.0	10000.0	44.09	56.09
22.56	NO						
1800.	0.1782E-01	6	1.0	1.0	10000.0	44.09	58.96
23.18	NO						
1900.	0.1816E-01	6	1.0	1.0	10000.0	44.09	61.82
23.80	NO						
2000.	0.1842E-01	6	1.0	1.0	10000.0	44.09	64.67
24.41	NO						
2100.	0.1848E-01	6	1.0	1.0	10000.0	44.09	67.51
24.93	NO						
2200.	0.1850E-01	6	1.0	1.0	10000.0	44.09	70.34
25.43	NO						
2300.	0.1847E-01	6	1.0	1.0	10000.0	44.09	73.16
25.94	NO						
2400.	0.1842E-01	6	1.0	1.0	10000.0	44.09	75.97
26.43	NO						
2500.	0.1833E-01	6	1.0	1.0	10000.0	44.09	78.76
26.92	NO						
2600.	0.1823E-01	6	1.0	1.0	10000.0	44.09	81.55
27.40	NO						
2700.	0.1810E-01	6	1.0	1.0	10000.0	44.09	84.33
27.87	NO						
2800.	0.1795E-01	6	1.0	1.0	10000.0	44.09	87.10
28.34	NO						
2900.	0.1779E-01	6	1.0	1.0	10000.0	44.09	89.86
28.80	NO						
3000.	0.1762E-01	6	1.0	1.0	10000.0	44.09	92.62
29.25	NO						
3500.	0.1647E-01	6	1.0	1.0	10000.0	44.09	106.26
31.11	NO						
4000.	0.1536E-01	6	1.0	1.0	10000.0	44.09	119.70
32.85	NO						
4500.	0.1431E-01	6	1.0	1.0	10000.0	44.09	132.98
34.48	NO						
5000.	0.1336E-01	6	1.0	1.0	10000.0	44.09	146.11
36.03	NO						

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

91.	0.8057E-01	4	20.0	20.0	6400.0	6.25	7.63
4.39	NO						

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.8057E-01	91.	0.

Note: The emission rate is dependent on the total list of known HAPs produced during the combustion of animal remains and natural gas. A copy of the health risk assessment can be seen in section VI. of this permit analysis. Additional documentation is on file with the Department.

VI. Health Risk Assessment

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

NEGLIGIBLE RISK ASSESSMENT ⁽¹⁾		MAQP 5244-00						
HAP		Modeled	Cancer URF ⁽²⁾	Cancer	CNCREL ⁽⁶⁾	CNCREL	Notes	
Crematorium Process Emissions		HAP Concentration	($\mu\text{g}/\text{m}^3$) ⁻¹	Risk ⁽³⁾	($\mu\text{g}/\text{m}^3$)	Quotient ⁽⁷⁾		
Bromoform		6.31E-06 $\mu\text{g}/\text{m}^3$	1.10E-06	6.95E-12	ND	NA	(AFSSCC 5-02-005-05)	
Carbon Tetrachloride		1.25E-05 $\mu\text{g}/\text{m}^3$	6.00E-06	7.50E-11	1.00E+02	1.25E-07	(AFSSCC 5-02-005-05)	
Chloroform		1.19E-05 $\mu\text{g}/\text{m}^3$	ND	ND	9.80E+01	1.21E-07	(AFSSCC 5-02-005-05)	
1,2-Dichloropropane(4)		2.87E-04 $\mu\text{g}/\text{m}^3$	1.90E-05	5.46E-09	4.00E+00	7.18E-05	(AFSSCC 5-02-005-05)	
Ethyl Benzene		3.51E-04 $\mu\text{g}/\text{m}^3$	2.50E-06	8.76E-10	1.00E+03	3.51E-07	(AFSSCC 5-02-005-05)	
Naphthalene ⁸		2.53E-03 $\mu\text{g}/\text{m}^3$	3.40E-05	8.60E-08	3.00E+00	8.43E-04	(AFSSCC 5-02-005-05)	
Tetrachloroethylene(5)		8.77E-06 $\mu\text{g}/\text{m}^3$	5.90E-06	5.18E-11	2.70E+02	3.25E-08	(AFSSCC 5-02-005-05)	
1,1,2,2-Tetrachloroethane		2.39E-05 $\mu\text{g}/\text{m}^3$	5.80E-05	1.39E-09	ND	NA	(AFSSCC 5-02-005-05)	
Toluene ⁹		1.01E-03 $\mu\text{g}/\text{m}^3$	ND	ND	5.00E+03	2.01E-07	(AFSSCC 5-02-005-05)	
Vinylidene Chloride		1.55E-05 $\mu\text{g}/\text{m}^3$	ND	ND	2.00E+02	7.73E-08	(AFSSCC 5-02-005-05)	
Xylene		4.79E-04 $\mu\text{g}/\text{m}^3$	ND	ND	1.00E+02	4.79E-06	(AFSSCC 5-02-005-05)	
Natural Gas Emissions								
2-Methylnaphthalene		1.02E-07 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Table 1. Prioritized Chronic Dose-Response Values	
3-Methylchloranthrene		7.68E-09 $\mu\text{g}/\text{m}^3$	0.0063	4.84E-11	ND	ND	Same as above	
7,12-Dimethylbenz(a)anthracene		6.83E-08 $\mu\text{g}/\text{m}^3$	0.071	4.85E-09	ND	ND	Same as above	
Acenaphthene		7.68E-09 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Acenaphthylene		7.68E-09 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Anthracene		1.02E-08 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Benzene		8.96E-06 $\mu\text{g}/\text{m}^3$	0.0000078	6.99E-11	3.00E+01	2.99E-07	Same as above	
Benzo(a)anthracene		7.68E-09 $\mu\text{g}/\text{m}^3$	0.00011	8.45E-13	ND	ND	Same as above	
Benzo(a)pyrene		5.12E-09 $\mu\text{g}/\text{m}^3$	0.0011	5.63E-12	ND	ND	Same as above	
Benzo(b)fluoranthene		7.68E-09 $\mu\text{g}/\text{m}^3$	0.00011	8.45E-13	ND	ND	Same as above	
Benzo(k)fluoranthene		7.68E-09 $\mu\text{g}/\text{m}^3$	0.00011	8.45E-13	ND	ND	Same as above	
Benzo(g,h,i)perylene		5.12E-09 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Chrysene		7.68E-09 $\mu\text{g}/\text{m}^3$	0.000011	8.45E-14	ND	ND	Same as above	
Dibenz(a,h)anthracene		5.12E-09 $\mu\text{g}/\text{m}^3$	0.0012	6.14E-12	ND	ND	Same as above	
1,4-Dichlorobenzene(p)		5.12E-06 $\mu\text{g}/\text{m}^3$	0.000011	5.63E-11	8.00E+02	6.40E-09	Same as above	
Fluoranthene		1.28E-08 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Fluorene		1.19E-08 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Formaldehyde		3.20E-04 $\mu\text{g}/\text{m}^3$	0.000013	4.16E-09	9.80E+00	3.27E-05	Same as above	
Hexane		7.68E-03 $\mu\text{g}/\text{m}^3$	ND	ND	7.00E+02	1.10E-05	Same as above	
Indeno(1,2,3,c,d)pyrene		7.68E-09 $\mu\text{g}/\text{m}^3$	0.00011	8.45E-13	ND	ND	Same as above	
Naphthalene		2.60E-06 $\mu\text{g}/\text{m}^3$	0.000034	8.85E-11	ND	ND	Same as above	
Phenanthrene		7.25E-08 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Pyrene		2.13E-08 $\mu\text{g}/\text{m}^3$	ND	ND	ND	ND	Same as above	
Toluene		1.45E-05 $\mu\text{g}/\text{m}^3$	ND	ND	5.00E+03	2.90E-09	Same as above	
Arsenic		8.53E-07 $\mu\text{g}/\text{m}^3$	0.0043	3.67E-09	1.50E-02	5.69E-05	Same as above	
Beryllium		5.12E-08 $\mu\text{g}/\text{m}^3$	0.0024	1.23E-10	2.00E-02	2.56E-06	Same as above	
Cadmium		4.69E-06 $\mu\text{g}/\text{m}^3$	0.0018	8.45E-09	1.00E-02	4.69E-04	Same as above	
Chromium, total		5.97E-06 $\mu\text{g}/\text{m}^3$	0.012	7.17E-08	1.08E-01	5.53E-05	Same as above	
Cobalt		3.58E-07 $\mu\text{g}/\text{m}^3$	ND	ND	1.00E-01	3.58E-06	Same as above	
Lead		2.13E-06 $\mu\text{g}/\text{m}^3$	ND	ND	1.50E-01	1.42E-05	Same as above	
Manganese		1.62E-06 $\mu\text{g}/\text{m}^3$	ND	ND	5.00E-02	3.24E-05	Same as above	
Mercury		1.11E-06 $\mu\text{g}/\text{m}^3$	ND	ND	3.00E-01	3.70E-06	Same as above	
Nickel		8.96E-06 $\mu\text{g}/\text{m}^3$	ND	ND	9.00E-02	9.96E-05	Same as above	
Selenium		1.02E-07 $\mu\text{g}/\text{m}^3$	ND	ND	2.00E+01	5.12E-09	Same as above	
TOTAL RISK				1.87E-07		1.70E-03		

(1) Source of chronic dose-response values is from Table 1: Prioritized Chronic Dose-Response Values for Screening Risk Assessments (4/27/2010), from www.epa.gov/ttn/atw/toxsource/table1.pdf .				
(2) Cancer Chronic Inhalation Unit Risk Factor from reference "1", units 1/ug/m3				
(3) Cancer Risk is unitless and is calculated by multiplying the predicted concentration by the URF.				
(4) Also known as Propylene dichloride				
(5) Also known as Tetrachloroethene, perchloroethylene.				
(6) Chronic Noncancer Reference Exposure Level from reference "1".				
(7) CNCREL Quotient Value is calculated by dividing the modeled HAP concentration by the CNCREL.				
(8) Naphthalene contribution from natural gas is summed in the crematorium process.				
(9) Toluene contribution from natural gas is summed in the crematorium process.				

Health Risk	Total Cumulative	Individual
Cancer Risk:	< 1.0E-05	< 1E-06
CNCREL Quotient:	< 1.0	NA

The Department determined that the risks estimated in the risk assessment are in compliance with the requirement to demonstrate negligible risk to human health and the environment. As demonstrated in the above tables, and in accordance with the negligible risk requirement, no single HAP concentration results in an excess lifetime cancer risk (ELCR) greater than 1.00E-06 and the sum of all HAPs results in an ELCR of less than 1.00E-05. Further, the sum of the non-cancer hazard quotient is 1.7E-03, which is less than 1.0 as required to demonstrate compliance with the negligible risk requirement.

VII. Taking or Damaging Implication Analysis

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

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?

YES	NO	
	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)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

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

DEPARTMENT OF ENVIRONMENTAL QUALITY
Air, Energy & Mining Division
Air Quality Bureau
1520 East Sixth Avenue
P.O. Box 200901, Helena, Montana 59620-0901
(406) 444-3490

ENVIRONMENTAL ASSESSMENT (EA)

Issued For: Keith Schnider

Permit Number: 5244-00

EA Draft: 07/13/2020
EA Final: 08/13/2020
Permit Final: 08/29/2020

1. *Legal Description of Site:* The facility is located in Section 13, Township 20 North, Range 3 East, Cascade County, Montana. The physical address is 1008 21st Avenue South, Great Falls, MT 59405.
2. *Description of Project:* (KS) proposed to install and operate a Crawford animal crematorium. The unit previously was used as a human crematorium but is being repurposed to operate as a pet crematorium. The installation will occur in an existing building so no new disturbance is expected.
3. *Objectives of Project:* The project would allow KS to safely dispose of animal remains while maintaining compliance with negligible risk requirements as discussed in Section VI of the permit analysis. Further, the project would result in business and revenue for the company.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative considers what would happen if there were no action taken by the permittee. However, KS would not be allowed to operate the crematorium which could result in a loss of future revenue. The Department did not pursue the “no-action” alternative because KS demonstrated compliance with all applicable rules and regulations as required for permit issuance.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in Permit #5244-00.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

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

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS:

The following comments have been prepared by the Department.

A. Terrestrial and Aquatic life and Habitats:

Emissions from the proposed project could impact terrestrial and aquatic life and habitats in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis and Section 7.F of this EA, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted.

Further, the crematorium would operate within an existing building with no new ground disturbance to the area would be required. Overall, any impact to the terrestrial and aquatic life and habitats of the proposed project area would be minor.

B. Water Quality, Quantity, and Distribution:

The proposed project would not affect water quantity or distribution in the proposed project area. The crematorium would operate within an existing building with no new ground disturbance required. Further, the project would not discharge or use water as part of normal operations.

Emissions from the proposed project could impact water quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis and Section 7.F of this EA, any emissions and resulting deposition impacts from the project would be minor due to the low concentration of those pollutants emitted.

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

The proposed project would not impact the geology, soil quality, stability, and moisture of the proposed project area. The crematorium would operate within an existing building with no new ground disturbance required.

Further, as described in Section V and Section VI of the permit analysis, and Section 7.F of this EA, the crematorium would result in minor air pollution emissions to the outside ambient environment. These pollutants would deposit on the soils in the surrounding area. Any impact from deposition of these pollutants would be minor due to dispersion characteristics and the low concentration of those pollutants emitted.

D. Vegetation Cover, Quantity, and Quality:

Emissions from the proposed project would impact vegetation cover, quantity, and quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis and 7.F of this EA, any emissions and resulting impacts from the project

would be minor due to dispersion characteristics of pollutants and the atmosphere, and the low concentration and magnitude of those pollutants emitted.

Further, the crematorium would operate within an existing building with no new ground disturbance required. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would be minor.

E. Aesthetics:

The proposed project would result in only minor impacts to the aesthetic nature of the proposed project area because the crematorium would operate within an existing building with no new ground disturbance required. Further, the overall land use in the area would not change as a result of the proposed project; therefore, the project would not change the aesthetic nature of the area. Further, visible emissions from the source would be limited to 10% opacity and the permit would include emission control requirements. Also, because the crematorium would be located within a building, the project would not result in excess noise from normal operations. Overall, any impact to the aesthetic nature of the project area would be minor.

F. Air Quality:

The proposed project would result in the emission of various criteria pollutants and HAPs to the ambient air in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis, KS demonstrated, through Screen View air dispersion modeling, that any air quality impacts from the proposed project would be minor.

The Department conducted air dispersion modeling to determine the ambient air quality impacts from HAPs that would be generated by the crematorium. The Screen View model was selected for the air dispersion modeling. The full meteorology option was selected to provide a conservative result. Receptors were placed from 5 to 1000 meters in a simple terrain array. Simple terrain receptors were used to represent the topography of the project area. The health risk assessment demonstrated that the risks associated with the crematorium are in compliance with the negligible risk requirement contained in MCA 75-2-215.

Stack parameters and emission rates used in the Screen View model are contained in Section V of the permit analysis and are on file with the Department. Stack velocity and gas temperature were taken from data provided by the manufacturer of the crematorium. The health risk assessment is contained in Section VI of the permit analysis. Due to the dispersion characteristics of the proposed area of operation and low levels of pollutants that would be emitted from the proposed project, and the corresponding minor deposition of those pollutants, the Department determined that any impacts to air quality would be minor.

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

Emissions from the proposed project would impact unique, endangered, fragile, or limited environmental resources located in the proposed project area because the proposed project

would result in increased emissions in the proposed project area. However, as detailed in Section 7.F of this EA and Section V and Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low concentration and low magnitude of those pollutants emitted.

Further, the crematorium would operate within an existing building with no new ground disturbance required, thus, the project would not change the typical character of the area. Overall, any impact to any existing unique, endangered, fragile, or limited environmental resources in the proposed project area would be minor. A search on the Natural Resource Information System – Montana Natural Heritage Program webpage yields R-spiny Softshell and Great Blue Heron as species of concern when the section containing the proposed operating location is selected. The Department reviewed the location and as defined by Executive Order No. 12-2015, the location is not within Greater Sage Grouse Habitat.

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

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

I. Historical and Archaeological Sites:

The proposed project would not result in any impact to any existing historical and archaeological sites in the proposed project area because the crematorium would operate within an existing building with no new ground disturbance required.

There is low likelihood of any disturbance to any known archaeological or historic site, given that the installation of the new crematorium would be within the existing building. Therefore, the operation would have no new effect on any known historic or archaeological site that may be located within or near the proposed operating site.

J. Cumulative and Secondary Impacts:

Overall, the cumulative and secondary impacts from this project on the physical and biological environment in the immediate area would be minor because the facility is relatively small by industrial standards, would operate within an existing building with no new ground disturbance required. Further, no additional industrial sources/impacts would result from the crematorium operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in Permit #5244-00.

8. The following sections summarize the potential economic and social effects of the proposed

project on the human environment. The “no-action” alternative was discussed previously.

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

A. Social Structures and Mores:

The proposed project would not have any impact on social structures and mores of the proposed area of operation because the project is small by industrial standards and operations would take place within an existing building with no new ground disturbance. Further, the predominant use of the surrounding area would not change as a result of the proposed project.

B. Cultural Uniqueness and Diversity:

The proposed project would not have any impact on cultural uniqueness and diversity of the proposed area of operation because the project is small by industrial standards and operations would take place within an existing building with no new ground disturbance required. Further, the predominant use of the surrounding area would not change as a result of the proposed project.

C. Local and State Tax Base and Tax Revenue:

The proposed project would have a minor impact on the local and state tax base and tax revenue because the project is small by industrial standards and would not result in any increased commercial activity beyond the proposed project. Further, the crematorium would operate within an existing building with no new ground disturbance required and with two new employees would be hired as a result of the proposed project.

D. Agricultural or Industrial Production:

Because the crematorium would operate within an existing building with no new ground disturbance required, the project would not impact or displace any land used for agricultural production. Further, the project would not result in any increased commercial/industrial activity beyond the proposed project.

E. Human Health:

As detailed in Section VI of the permit analysis, a health risk assessment was conducted to determine if the proposed crematorium would comply with the negligible risk requirement of MCA 75-2-215 and ARM 17.8.770. As defined in ARM 17.8.740(10), negligible risk is “*an increase in excess lifetime cancer risk of less than 1.0×10^{-6} for any individual pollutant, and 1.0×10^{-5} for the aggregate of all pollutants, and an increase in the sum of the non-cancer hazard quotients for all pollutants with similar toxic effects of less than 1.0 in order to determine negligible risk.*” For the purposes of determining negligible risk for the crematorium operations, all pollutants were included in the human health risk assessment.

All of the individual pollutant concentrations for excess lifetime cancer risk meet the negligible

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

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

Because the crematorium would operate within an existing building with no new ground disturbance required, the project would not affect any access to or quality of any recreation or wilderness activities in the area. In addition, the minimal noise created by the crematorium operations would not impact the area due to the source being located within the existing building structure.

G. Quantity and Distribution of Employment:

The proposed project would not impact the quantity and distribution of employment of the proposed project area because the project likely only require one or two employees.

H. Distribution of Population:

The proposed project would not impact the distribution of population of the proposed project area because the project would likely only require a single operator and possibly a support employee.

I. Demands for Government Services:

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

J. Industrial and Commercial Activity:

The proposed project would result in only a minor impact on local industrial and commercial activity because the crematorium would operate within an existing building with no new ground disturbance required. Therefore, the proposed project would not result in additional industrial production beyond the proposed operations.

K. Locally Adopted Environmental Plans and Goals:

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the proposed project. The state standards would be to protect the proposed project site and the environment surrounding the area of operations.

L. Cumulative and Secondary Impacts:

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social environment in the immediate area because the facility is relatively small by industrial standards, would operate within an existing building with no new ground disturbance required. In addition, the facility would not contribute to any secondary commercial or industrial activity. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #5244-00.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permit action is for the construction and operation of a crematorium. Permit #5244-00 includes conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, as detailed in the above EA, there are no significant impacts associated with the proposed project.

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

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

EA prepared by: Craig Henrikson

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