

February 24, 2025

Abby Ingram  
Ingram Veterinary Clinic, PLLC  
Ingram Veterinary Clinic  
2 Gebhardt Ln  
Thompson Falls, Montana 59873

Sent via email: [aingram@ingram.vet](mailto:aingram@ingram.vet)

**RE: Final Permit Issuance for MAQP #5324-00**

Dear Abby Ingram:

Montana Air Quality Permit (MAQP) #5324-00 is deemed final as of February 22, 2025, by DEQ. This permit is for Ingram Veterinary Clinic, PLLC, a pet crematorium. 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



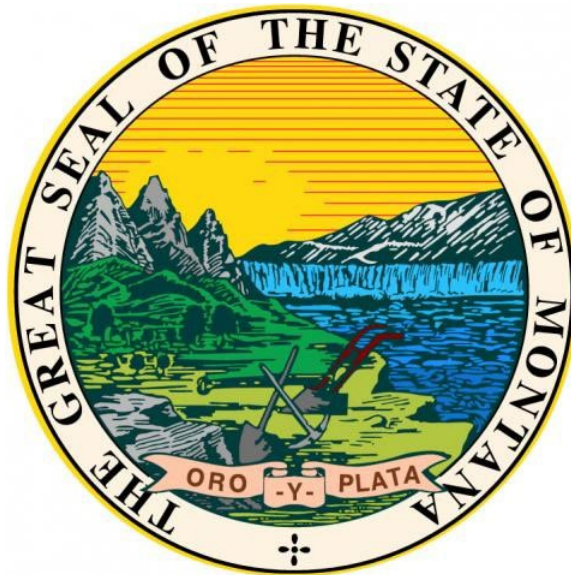
Emily Hultin  
Air Quality Engineering Scientist  
Air Quality Bureau  
(406) 444-2049

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

Montana Air Quality Permit #5324-00

Ingram Veterinary Clinic, PLLC  
Ingram Veterinary Clinic  
Section 23, Township 22 North, Range 30 West  
2 Gebhardt Ln Thompson Falls, Montana 59873

February 22, 2025



## MONTANA AIR QUALITY PERMIT

Issued To:  
Ingram Veterinary Clinic, PPLC  
2 Gebhardt Ln  
Thompson Falls, Montana 59873

MAQP: #5324-00  
Application Complete: 12/06/2024  
Preliminary Determination Issued: 01/03/2024  
DEQ's Decision Issued: 02/06/2025  
Permit Final: 02/22/2025

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Ingram Veterinary Clinic, PLLC (IVC), 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. Permitted Equipment

One propane-powered cremation unit, a C12-400-2LP-SC4-TCDR Firelake Incinerator, with a 46 pound per hour (lb/hr) feed rate and a 1.6 MMBtu rating.

#### B. Plant Location

The facility is located in Section 23, Township 22 North, Range 30 West, in Sanders County, Montana. The physical address is 2 Gebhardt Lane, in Thompson Falls, Montana.

### Section II: Conditions and Limitations

#### A. Emission Limitations

1. IVC shall not incinerate/cremate any material other than animal remains and any corresponding container unless approved in writing by the Department of Environmental Quality (DEQ) (ARM 17.8.749).
2. The cremation unit shall be equipped with a secondary combustion chamber controlled with an afterburner. IVC shall preheat the secondary chamber of the cremation unit to a minimum of 1,600 degrees Fahrenheit with a 1/8 second retention time, prior to igniting a charge in the primary chamber burner. IVC shall maintain the secondary chamber temperature such that no single reading is less than 1,600 degrees Fahrenheit in the secondary chamber during cremation (ARM 17.8.752).
3. IVC shall develop procedures (operating procedures manual) for the cremation unit and keep a physical copy of the operating procedures manual onsite at all times. All personnel who operate the cremation unit shall be trained in the use of the operating procedures. IVC shall keep training records and supply those training records and a copy of the operating procedures manual to DEQ upon request (ARM 17.8.749 and 17.8.752).

4. The design capacity of the cremation unit shall not exceed 46 pounds per hour (lb/hr) (ARM 17.8.749).
5. IVC shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
6. IVC 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 (ARM 17.8.308).
7. IVC shall not cause or authorize emissions to be discharged into the outdoor atmosphere from the incinerator that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.316).
8. IVC shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.5 (ARM 17.8.749).

B. 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 further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. IVC 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 identified in the emission inventory contained in the permit analysis.

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 the units required by DEQ. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. IVC shall notify DEQ of any construction or improvement project, conducted pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, 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 DEQ, in writing, 10 days prior to startup 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(l)(d) (ARM 17.8.745).

All records compiled in accordance with this permit must be maintained by IVC as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by DEQ, and must be submitted to DEQ upon request. These records may be stored at a location other than the plant site upon approval by DEQ (ARM 17.8.749).

3. IVC shall record the daily quantity (mass) of material incinerated/cremated and the daily hours of operation of the cremation unit (date, start time, end time, and operator) (ARM 17.8.749).

D. Continuous Emissions Monitoring Systems

1. IVC shall install, calibrate, maintain, and operate continuous monitoring and recording equipment on the permitted cremation unit to measure the secondary chamber exit gas temperature, as required by Section II.A.2 (ARM 17.8.752).

E. Notification

1. IVC shall provide DEQ with written notification of the commencement and completion of the installation of the incinerator (ARM 17.8.749).
2. IVC shall provide DEQ with written notification of the start-up date of the cremation unit within 15 days after start-up (ARM 17.8.749).

SECTION III: General Conditions

- A. Inspection – IVC 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 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 IVC fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving IVC 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 therefor, 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 IVC may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit Analysis  
Ingram Veterinary Clinic, PLLC  
MAQP #5324-00

I. Introduction/Process Description

Ingram Veterinary Clinic, PLLC (IVC) owns and operates a pet crematorium. The IVC facility is located in Section 23, Township 22 North, Range 30 West, in Sanders County, Montana. The physical address is 2 Gebhardt Lane, in Thompson Falls, Montana and is known as the Ingram Veterinary Clinic.

A. Permitted Equipment

One propane powered cremation unit, a C12-400-2LP-SC4-TCDR Firelake Incinerator, with a 46 pound per hour (lb/hr) feed rate, with a 1.6 MMBtu rating.

B. Source Description

The crematorium has a maximum incineration design capacity of 46 lb/hr of animal remains. The crematorium is propane powered for combustion in the primary chamber and secondary auxiliary burner with a combined rating of 1.6 MMBtu/hr.

This crematorium is designed to heat the primary chamber to 1,600 degrees Fahrenheit and the secondary chamber (afterburner) to 1,600 degrees Fahrenheit.

The primary chamber is to be heated to 1,600 degrees Fahrenheit prior to placing animal remains in the chamber. The secondary chamber is to be heated to 1,600 degrees Fahrenheit prior to commencing any cremation. Complete combustion is ensured by maintaining the secondary chamber at or above 1,600 degrees Fahrenheit throughout the cremation process. Residence time in the secondary chamber is greater than 1/8 second to ensure complete combustion.

C. Response to Public Comments

No public comments were received.

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 location 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).

IVC 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

IVC must maintain compliance with the applicable ambient air quality standards.



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, IVC 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 of dry flue gas, adjusted to 12% carbon dioxide 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.
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 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 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 any NSPS subpart defined in 40 CFR Part 60.

9. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

IVC is not a NESHAP affected source, therefore it is not an affected facility under this subpart.

10. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:

IVC is not a NESHAP affected source, therefore it is not an affected facility under this subpart.

- D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.402 Requirements. IVC must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the new or modified stack for IVC is below the allowable 65-meter GEP stack height.

- E. 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 DEQ. IVC 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 DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by DEQ. 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. 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 that prorate the required fee amount.

- F. 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 of any pollutant. IVC does not have a PTE greater than 25 tons per year, however, in accordance with MCA 75-2-215, an air permit must be obtained prior to the construction and operation of an incinerator, regardless of potential to emit. Since IVC must obtain an air quality permit, all normally applicable requirements apply.
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, modification, or use of a source. IVC 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. IVC submitted an affidavit of publication of public notice for the November 21, 2024, issue of the *Sanders County Ledger*, a newspaper of general circulation in the Town of Thompson Falls, in Sanders County Montana, 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 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 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 IVC 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 17.8.760 Additional Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
  12. 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.
  13. 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).
  14. 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.
  15. 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.
  16. 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, Montana Code Annotated (MCA).
  17. ARM 17.8.771 Mercury Emission Standards for Mercury-Emitting Generating Units. This rule identifies mercury emission limitation requirements, mercury control strategy requirements, and application requirements for mercury-emitting generating units.
- G. 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 because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

1. ARM 17.8.1204 Air Quality Operating Permit Program. (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 MAQP #5324-00 for IVC, 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 for 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 any current NESHAP standards.
  - f. This source is not a Title IV affected source, or a solid waste combustion unit.
  - g. This source is not an EPA designated Title V source.

Based on these facts, the DEQ determined that IVC is a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, IVC will be required to obtain a Title V Operating Permit.

### III. BACT Analysis and Determination

A BACT determination is required for each new or modified source. IVC shall install on the new or modified source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized.

DEQ provided the following BACT analysis and determination. The following control options have been reviewed and analyzed by DEQ in order to determine BACT.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IVC shall develop procedures (operating procedures manual) for the cremation unit and keep a physical copy of the operating procedures manual onsite at all times. All personnel who operate the cremation unit shall be trained in the use of the operating procedures. IVC shall keep training records and supply those training records and a copy of the operating procedures manual to DEQ upon request.

**Carbon Monoxide BACT for the New Incinerator:**

**Step 1: Identify All Available Control Technologies**

The cremation unit will have a secondary afterburner chamber. The following control technologies for Carbon Monoxide (CO) reduction are available and presented top-down by control efficiency:

Table 1. Technologies Available

<b>Technology</b>
Afterburner/Secondary Chamber
Alkaline Hydrolysis

**Step 2: Eliminate Technically Infeasible Control Options**

Table 2. Technically Feasible Technologies

<b>Technology</b>	<b>Technically Feasible</b>
Afterburner	Yes
Alkaline Hydrolysis	No

Alkaline Hydrolysis: This method utilizes water, alkaline chemicals, and heat, as the main reactants to aid in natural decomposition of human or pet remains. This method results in fragments of bone and a neutral liquid called effluent. The effluent is comprised of salts, sugars, amino acids, and peptides. This process mirrors the natural decomposition as a traditional burial, but in an accelerated time frame with the aid of chemicals. After this process is completed, no DNA or tissue matter are left, and the effluent can be disposed of as wastewater.

This method is not legalized in all 50 states as of 2024, but is legal in the state of Montana (Alkaline Hydrolysis).

**Step 3: Rank Remaining Control Technologies by Control Effectiveness**

After elimination of Alkaline Hydrolysis, the only remaining available and technically feasible CO control technology is the proposed secondary chamber and afterburner.

Table 3. Ranked Control Technologies

<b>Technology</b>	<b>Ranking</b>
Afterburner	1

#### **Step 4: Evaluate Most Effective Controls and Document Results**

BACT for products of combustion/incineration or CO resulting from cremation unit operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber.

Since the potential emissions of all regulated air pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for CO economically infeasible in this case.

#### **Step 5: Identify BACT**

IVC proposes to install and operate a crematorium equipped with a secondary chamber and afterburner designed specifically to reduce the amount of pollutants, including Hazardous Air Pollutants (HAPs) emitted by the incinerator. Previous research done by DEQ, including similar BACT analyses for crematoriums, have not required additional air pollution control equipment beyond the control of the secondary chamber, which maintains a stable temperature and retention of combustion gases within.

Any additional controls would be economically infeasible.

BACT for products of combustion/incineration, including CO resulting from crematorium operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and appropriate residence time within the secondary chamber. Turbulence is achieved with proper introduction of air into the combustion chambers. Temperature is achieved by preheating the primary chamber to 1,500 degrees Fahrenheit and the secondary chamber to a minimum of 1,600 degrees Fahrenheit prior to placing the remains and associated container. The secondary chamber is required to maintain at a minimum operating temperature of 1,600 °F. Residence time is achieved by sizing the secondary chamber large enough to support final combustion within the secondary combustion chamber. This design incorporates no heat recovery from the secondary combustion chamber and therefore, the stack volume operates effectively as an extension of the secondary combustion chamber volume. When the volume of the secondary combustion chamber and stack are combined the average residence time is over one second.

Furthermore, natural gas or propane combustion inherently results in low emissions of air pollutants due to characteristics of the fuel fired. Potential CO emissions from the combustion of natural gas or propane to operate the crematorium is less than 1.0 TPY. Since the potential emissions of all regulated pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for CO economically infeasible in this case.

Based on these conclusions, DEQ determined that proper unit design and operation, including preheating the primary chamber to 1500 degrees Fahrenheit and the secondary chamber to 1,600 degrees Fahrenheit before inserting the remains and maintaining the secondary chamber at or above 1,600 degrees Fahrenheit, and proper operation and maintenance of the crematorium with no additional control constitutes BACT.

The BACT conclusions prescribed under MAQP #5324-00 provide comparable controls and control cost to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

**NO<sub>x</sub> BACT for the New Incinerator:**

**Step 1: Identify All Control Technologies**

The new incinerator will have a second afterburner chamber. In addition to the standard afterburner, the following control technologies for Oxides of Nitrogen (NO<sub>x</sub>) reduction are possible:

Table 1. Technologies Available

<b>Technology</b>
Afterburner
Selective Catalytic Reduction
Electric Cremation Unit

**Step 2: Eliminate Technically Infeasible Control Options**

Table 2. Technically Feasible Technologies

<b>Technology</b>	<b>Technically Feasible</b>
Afterburner	Yes
Selective Catalytic Reduction	No
Electric Cremation Unit	No

Selective Catalytic Reduction: This process is the chemical reduction of NO<sub>x</sub> using a metal-based catalyst to increase the rate that NO<sub>x</sub> is reduced. Typically, this technology is used in stationary source fossil fuel-fired combustion units. These are generally put in place for sources that require a high level of NO<sub>x</sub> reduction, potentially reaching up to 100% reduction in NO<sub>x</sub> levels. Costs can vary depending on the type of unit, type of fuel, the NO<sub>x</sub> inlet/outlet design level and reactor arrangement. On average, a small unit to be retrofitted onto an existing unit cost approximately \$100/kilowatt based on costs in 2011. Operational and maintenance costs at approximately 0.11cents/kilowatt-hour (Selective Catalytic Reduction).

Electric Cremation Unit: This process uses electricity to cremate human and/or pet remains. The unit consists of an inner and outer chamber, with the remains in the inner chamber and the electrical elements in the outer chamber. After attaching electrodes to the remains, an electrical current passes through the body, which is what causes the process of cremation to occur. This process produces no gas emissions but would require an entirely new cremation unit. This process is not currently legal in all 50 states. This would require an entirely different cremation unit than the one at this facility.



### Step 3: Rank Remaining Control Technologies by Control Effectiveness

After the elimination of Selective Catalytic Reduction and an Electric Cremation Unit, this leaves the afterburner, the second chamber on the incinerator, as the only available control technology for NO<sub>x</sub> emissions.

Table 3. Ranked Control Technologies

Technology	Ranking
Afterburner	1
Selective Catalytic Reduction	2
Electric Cremation Unit	3

### Step 4: Evaluate Most Effective Controls and Document Results

BACT for products of combustion/incineration NO<sub>x</sub> resulting from crematorium operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber.

Since the potential emissions of all regulated pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for NO<sub>x</sub> economically infeasible in this case.

### Step 5: Identify BACT

IVC proposes to install and operate a crematorium equipped with a secondary chamber designed specifically to reduce the amount of pollutants, including Hazardous Air Pollutants (HAPs) emitted by the incinerator. Previous research done by DEQ, including similar BACT analyses for crematoriums, have not required additional air pollution control equipment beyond the control of the secondary chamber, which maintains a stable temperature and retention of combustion gases within.

Any additional controls would be economically infeasible.

BACT for products of combustion/incineration (carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), volatile organic compounds (VOC), and sulfur dioxide (SO<sub>2</sub>) and HAPs,) resulting from crematorium operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber. Turbulence is achieved with proper introduction of air into the combustion chambers. Temperature is achieved by preheating the primary chamber to 1,500 degrees Fahrenheit and the secondary chamber to a minimum of 1,600 degrees Fahrenheit prior to placing the remains and associated container. The secondary chamber is required to maintain at a minimum operating temperature of 1,600 °F. Residence time is achieved by sizing the secondary chamber large enough to support final combustion within the secondary combustion chamber. This design incorporates no heat recovery from the secondary combustion chamber and therefore, the stack volume operates effectively as an extension of the secondary combustion chamber volume. When the volume of the secondary combustion chamber and stack are combined the average residence time is over one second.

Furthermore, natural gas or propane combustion inherently results in low emissions of air pollutants due to characteristics of the fuel fired. Potential NO<sub>x</sub> emissions from the combustion of natural gas or propane to operate the crematorium is less than 2.0 TPY. Since the potential emissions of all regulated pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for NO<sub>x</sub> economically infeasible in this case.

Based on these conclusions, DEQ determined that proper unit design that includes preheating the primary chamber and the secondary chamber to 1,600 degrees Fahrenheit before inserting the remains and maintaining the secondary chamber at or above 1,600 degrees Fahrenheit, and proper operation and maintenance of the crematorium with no additional control constitutes BACT.

The BACT conclusions prescribed under MAQP #5324-00 provide comparable controls and control cost to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

**PM/PM<sub>10</sub>/PM<sub>2.5</sub> BACT for the New Incinerator:**

**Step 1: Identify All Control Technologies**

The new incinerator will have a second afterburner chamber. In addition to the standard afterburner, the following control technologies for particulate matter (PM) reduction are possible:

Table 1. Technologies Available

<b>Technology</b>
Afterburner
Wet or Dry Scrubber

**Step 2: Eliminate Technically Infeasible Control Options**

Table 2. Technically Feasible Technologies

<b>Technology</b>	<b>Technically Feasible</b>
Afterburner	Yes
Wet Scrubber	No

Wet or Dry Scrubber: A wet scrubber process utilizes a liquid to remove pollutants from an exhaust stream through the process of absorption. Most wet scrubbers operate in an excess of 90% removal efficiencies, depending on pollutant (Scrubber for Gaseous Control). While the concept of a wet scrubber is feasible, the cost associated with the removal of PM makes this technically infeasible. With a total capital investment ranging from \$100,000-\$400,000, depending on the type of scrubber selected. As the total TPY of

PM being emitted is 2 TPY, the cost associated with installed new equipment to remove these low levels of PM emissions is technically infeasible.

### Step 3: Rank Remaining Control Technologies by Control Effectiveness

After the elimination of a Wet Scrubber, this leaves the afterburner, the second chamber on the incinerator, as the only available control technology for PM emissions.

Table 3. Ranked Control Technologies

Technology	Ranking
Afterburner	1
Wet Scrubber	2

### Step 4: Evaluate Most Effective Controls and Document Results

BACT for products of combustion/incineration PM resulting from crematorium operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber.

Since the potential emissions of all regulated pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for PM economically infeasible in this case.

### Step 5: Identify BACT

IVC proposes to install and operate a crematorium equipped with a secondary chamber designed specifically to reduce the amount of pollutants, including Hazardous Air Pollutants (HAPs) emitted by the incinerator. Previous research done by DEQ, including similar BACT analyses for crematoriums, have not required additional air pollution control equipment beyond the control of the secondary chamber, which maintains a stable temperature and retention of combustion gases within.

Any additional controls would be economically infeasible.

BACT for products of combustion/incineration particulate matter (PM) resulting from crematorium operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber. Turbulence is achieved with proper introduction of air into the combustion chambers. Temperature is achieved by preheating the primary chamber to 1,500 degrees Fahrenheit and the secondary chamber to a minimum of 1,600 degrees Fahrenheit prior to placing the remains and associated container. The secondary chamber is required to maintain at a minimum operating temperature of 1,600 °F. Residence time is achieved by sizing the secondary chamber large enough to support final combustion within the secondary combustion chamber. This design incorporates no heat recovery from the secondary combustion chamber and therefore, the stack volume operates effectively as an extension of the secondary combustion chamber volume. When the volume of the secondary combustion chamber and stack are combined the average residence time is over one second.

Furthermore, natural gas or propane combustion inherently results in low emissions of air pollutants due to characteristics of the fuel fired. Potential PM emissions from the combustion of natural gas or propane to operate the crematorium are each less than 2.0 TPY. Since the potential emissions of all regulated pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for PM economically infeasible in this case.

Based on these conclusions, DEQ determined that proper unit design that includes preheating the primary chamber and the secondary chamber to 1,600 degrees Fahrenheit before inserting the remains and maintaining the secondary chamber at or above 1,600 degrees Fahrenheit, and proper operation and maintenance of the crematorium with no additional control constitutes BACT.

The BACT conclusions prescribed under MAQP #5324-00 provide comparable controls and control cost to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

**SO<sub>x</sub> BACT for the New Incinerator:**

**Step 1: Identify All Control Technologies**

The new incinerator will have a second afterburner chamber. In addition to the standard afterburner, the following control technologies for sulfur oxides (SO<sub>x</sub>) reduction are possible:

Table 1. Technologies Available

<b>Technology</b>
Afterburner
Wet Scrubber

**Step 2: Eliminate Technically Infeasible Control Options**

Table 2. Technically Feasible Technologies

<b>Technology</b>	<b>Technically Feasible</b>
Afterburner	Yes
Wet Scrubber	No

Wet Scrubber: A wet scrubber process utilizes a liquid to remove pollutants from an exhaust stream through the process of absorption. Most wet scrubbers operate in an excess of 90% removal efficiencies, depending on pollutant (Scrubber for Gaseous Control). While the concept of a wet scrubber is feasible, the cost associated with the removal of SO<sub>x</sub> makes this technically infeasible. With a total capital investment ranging from \$100,000-\$400,000, depending on the type of scrubber selected. As the total TPY of SO<sub>x</sub> being emitted is 1 TPY, the cost associated with installed new equipment to remove these low levels of SO<sub>x</sub> emissions is technically infeasible.

### Step 3: Rank Remaining Control Technologies by Control Effectiveness

After the elimination of a Wet Scrubber, this leaves the afterburner, the second chamber on the incinerator, as the only available control technology for SO<sub>x</sub> emissions.

Table 3. Ranked Control Technologies

Technology	Ranking
Afterburner	1
Wet Scrubber	2

### Step 4: Evaluate Most Effective Controls and Document Results

BACT for products of combustion/incineration SO<sub>x</sub> resulting from crematorium operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber.

Since the potential emissions of all regulated pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for SO<sub>x</sub> economically infeasible in this case.

### Step 5: Identify BACT

IVC proposes to install and operate a crematorium equipped with a secondary chamber designed specifically to reduce the amount of pollutants, including Hazardous Air Pollutants (HAPs) emitted by the incinerator. Previous research done by DEQ, including similar BACT analyses for crematoriums, have not required additional air pollution control equipment beyond the control of the secondary chamber, which maintains a stable temperature and retention of combustion gases within.

Any additional controls would be economically infeasible.

BACT for products of combustion/incineration sulfur oxides (SO<sub>x</sub>) resulting from crematorium operations is proper crematorium design and operation. Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber. Turbulence is achieved with proper introduction of air into the combustion chambers. Temperature is achieved by preheating the primary chamber to 1,500 degrees Fahrenheit and the secondary chamber to a minimum of 1,600 degrees Fahrenheit prior to placing the remains and associated container. The secondary chamber is required to maintain at a minimum operating temperature of 1,600 °F. Residence time is achieved by sizing the secondary chamber large enough to support final combustion within the secondary combustion chamber. This design incorporates no heat recovery from the secondary combustion chamber and therefore, the stack volume operates effectively as an extension of the secondary combustion chamber volume. When the volume of the secondary combustion chamber and stack are combined the average residence time is over one second.

Furthermore, natural gas or propane combustion inherently results in low emissions of air pollutants due to characteristics of the fuel fired. Potential SO<sub>x</sub> emissions from the combustion of natural gas or propane to operate the crematorium are each less than 1.0 TPY. Since the potential emissions of all regulated pollutants resulting from natural gas or propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for SO<sub>x</sub> economically infeasible in this case.

Based on these conclusions, DEQ determined that proper unit design that includes preheating the primary chamber and the secondary chamber to 1,600 degrees Fahrenheit before inserting the remains and maintaining the secondary chamber at or above 1,600 degrees Fahrenheit, and proper operation and maintenance of the crematorium with no additional control constitutes BACT.

The BACT conclusions prescribed under MAQP #5324-00 provide comparable controls and control cost to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

#### IV. Emission Inventory

Table 1. Emissions from Animal Remains Combustion

<b>Pollutant</b>	<b>Emissions Factor (lb/ton)</b>	<b>lb/hr</b>	<b>TPY</b>
SO <sub>x</sub>	2.17	0.04991	0.21861
NO <sub>x</sub>	3.56	0.08188	0.35863
VOC	0.299	0.00688	0.03012
PM <sub>2.5</sub>	4.67	0.10741	0.47046
PM <sub>10</sub>	4.67	0.10741	0.47046
CO	2.95	0.06785	0.29718

Notes:

1. Incinerator emissions based on EPA emissions from Table 2.3-1 and 2.3-2 of AP-42 (5<sup>th</sup> Edition)

Equation for determining pounds/hr:

$$\frac{lb}{hr} = feed\ rate \left( \frac{lb}{hr} \right) * Emissions\ Factor \left( \frac{lb}{ton} \right) * \frac{1\ ton}{2000\ lbs}$$

Example Calculation for determining SO<sub>x</sub> lb/hr:

$$0.05425 \frac{lb}{hr} = 50 \frac{lb}{hr} * 2.17 \left( \frac{lb}{ton} \right) * \frac{1\ ton}{2000\ lbs}$$

Equation for determining the Potential to Emit (PTE):

$$TPY = \frac{lb}{hr} * 8760 \frac{hr}{yr} * \frac{1ton}{2000 lbs}$$

Example calculation for determining the PTE for SO<sub>x</sub>:

$$0.23762 TPY = 0.05425 * 8760 \frac{hr}{yr} * \frac{1ton}{2000 lbs}$$

Table 2. Emissions from Propane Combustion

Pollutant	Emissions Factor (lb/10 <sup>3</sup> gal)	lb/hr	TPY
SO <sub>x</sub>	0.02	0.00035	0.00153
NO <sub>x</sub>	13	0.227	0.996
VOC	1	0.0175	0.077
PM <sub>2.5</sub>	0.7	0.0122	0.054
PM <sub>10</sub>	0.7	0.0122	0.054
CO	7.5	0.131	0.574

1. Assumes a 20% sulfur content
2. Uses heat contents of 91.5 x 10<sup>6</sup> Btu/10<sup>3</sup> gallon for propane from AP 42, 1.5.

Example Calculation for determining the lb/hr for NO<sub>x</sub> for Propane Combustion

$$\frac{lb}{hr} NO_x = \text{Feedrate} * \text{Given Heat Content (from AP42, Chapter 1.5)} * \text{Btu chamber rating} * \text{Emissions Factor}$$

$$\frac{lb}{hr} NO_x = \frac{10^3}{91.5 \times 10^6} * 1,600,000 * 13 = 0.227 lb/hr$$

Example Calculation for determining the PTE for NO<sub>x</sub> for Propane Combustion

$$TPY = \frac{lb}{hr} * \frac{\text{Operating Hours}}{2000 lb}$$

$$TPY = 0.227 * \frac{8760 hrs}{2000 lb} = 0.996 TPY$$

DEQ 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. DEQ considered only those HAPs for which an emission factor was available and that have been analyzed for other permitted similar sources. Table 3 below contains HAPs from propane combustion and for HAPs from combustion of the animal remains. This source uses propane but emission factors for natural gas are assumed equivalent to natural gas.

Table 3. Hazardous Air Pollutants (HAPs) Emissions (Including Fuel)

HAP Category / Pollutant Name	Emission Factor (lb/ 150lb body)	lb/hr	TPY
Antimony (less than)	0.0000151	4.63067E-06	2.02823E-05
Arsenic (less than)	0.000015	0.0000046	0.000020148
Beryllium	0.00000137	4.20133E-07	1.84018E-06
Cadmium	0.000011	3.37333E-06	1.47752E-05
Chromium	0.0000299	9.16933E-06	4.01617E-05
Chromium, hx	0.0000135	0.00000414	1.81332E-05
Cobalt (less than)	0.000000875	2.68333E-07	1.1753E-06
Lead	0.0000662	2.03013E-05	8.89198E-05
Nickel	0.0000382	1.17147E-05	5.13102E-05
Selenium	0.0000436	1.33707E-05	5.85635E-05
Zinc	0.000353	0.000108253	0.00047415
2-methylnaphthalene	0.000024	0.00000736	3.22368E-05
3-methylchloranthrene (less than)	0.0000009	0.000000276	1.20888E-06
7,12 Dibenz(a)anthracene (less than)	0.000008	2.45333E-06	1.07456E-05
Anthracene (less than)	0.0000012	0.000000368	1.61184E-06
Benzene	0.0021	0.000644	0.00282072
Dichlorobenzene	0.0012	0.000368	0.00161184
Hexane	1.8	0.552	2.41776
Napthalene	0.00061	0.000187067	0.000819352
Phenanathrene	0.000017	5.21333E-06	2.28344E-05
Toluene	0.0034	0.001042667	0.00456688
Acenaphthene	0.000000111	3.404E-08	1.49095E-07
Acenaphthylene	0.000000122	3.74133E-08	1.6387E-07
Benzo(a)anthracene (less than)	4.88E-09	1.49653E-09	6.55482E-09
Benzo(a)pyrene (less than)	1.455E-08	4.462E-09	1.95436E-08
Benzo(b)fluoranthene (less than)	7.95E-09	2.438E-09	1.06784E-08
Benzo(g,h,i)perylene (less than)	1.455E-08	4.462E-09	1.95436E-08
Benzo(k)fluoranthene (less than)	7.1E-09	2.17733E-09	9.53672E-09



Chrysene (less than)	0.000000027	8.28E-09	3.62664E-08
Dibenzo(a,h)anthracene (less than)	6.35E-09	1.94733E-09	8.52932E-09
Fluorene	0.000000417	1.2788E-07	5.60114E-07
Fluoranthene	0.000000205	6.28667E-08	2.75356E-07
Indeno(1,2,3-cd)pyrene (less than)	7.7E-09	2.36133E-09	1.03426E-08
Phenanthrene	0.00000229	7.02267E-07	3.07593E-06
Pyrene	0.000000162	4.968E-08	2.17598E-07
1,2,3,4,6,7,8-Heptachlorodibenzofuran (less than)	2.285E-09	7.00733E-10	3.06921E-09
1,2,3,4,7,8,9-Heptachlorodibenzofuran (less than)	1.39E-10	4.26267E-11	1.86705E-10
1,2,3,4,7,8-Hexachlorodibenzofuran	9.53E-10	2.92253E-10	1.28007E-09
1,2,3,6,7,8-Hexachlorodibenzofuran	8.52E-10	2.6128E-10	1.14441E-09
1,2,3,7,8,9-Hexachlorodibenzofuran	1.67E-09	5.12133E-10	2.24314E-09
2,3,4,6,7,8-Hexachlorodibenzofuran	3.44E-10	1.05493E-10	4.62061E-10
1,2,3,7,8-Pentachlorodibenzofuran (less than)	1.47E-10	4.508E-11	1.9745E-10
2,3,4,7,8-Pentachlorodibenzofuran (less than)	4.425E-10	1.357E-10	5.94366E-10
2,3,7,8-Tetrachlorodibenzofuran	5.19E-10	1.5916E-10	6.97121E-10
Acetaldehyde	0.00013	3.98667E-05	0.000174616
Formaldehyde	0.000034	1.04267E-05	4.56688E-05
Hydrogen chloride	0.072	0.02208	0.0967104
Hydrogen fluoride	0.00066	0.0002024	0.000886512
2,3,7,8-tetrachlorodibenzo-p-dioxin	7.94E-11	2.43493E-11	1.0665E-10
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	3.79E-09	1.16227E-09	5.09073E-09
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	2.75E-10	8.43333E-11	3.6938E-10
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	3.97E-10	1.21747E-10	5.3325E-10
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	4.92E-10	1.5088E-10	6.60854E-10
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	2.33E-10	7.14533E-11	3.12966E-10
<b>Total</b>		<b>0.576771385</b>	<b>2.526258665</b>

V. Existing Air Quality

The IVC facility is located in Township 22N, Section 23, Range 30W, in Sanders County, Montana. The physical address of the facility is 2 Gebhardt Lane, in Thompson Falls, Montana. Sanders County is classified as Unclassifiable/Attainment for all criteria pollutants as of November 19, 2024. Part of Sanders County, the town of Thompson Falls and vicinity: including the following sections (R29W, T21N- Sections 5, 6, 7, 8, 9, 10, 15, and 16) are classified as an Attainment area under a Limited Maintenance Plan or LMP for PM<sub>10</sub>, as of July 8, 2022. This facility is not located within the designated attainment area.

VI. Air Quality Impacts

DEQ conducted SCREEN View air dispersion modeling, an EPA-approved screening model, for each of the five units. DEQ used the indicated combustion ratings for the cremation unit, along with the stack diameter, stack height, and required discharge temperature to model for HAPs from both the combustion of animal remains as well as from the combustion of natural gas/propane. Since different approaches and different emission factors have been used over time, each of the five units were modeled with the same emission factors. The contribution from each unit was then combined for the HAPs from the combustion of natural gas/propane and combined for the HAPs from combustion of the animal remains and then used in the Health Risk Assessment described below.

VII. Ambient Air Impact Analysis

Based on the information provided and the conditions established in MAQP #5324-00 DEQ determined that the impact from this permitting action will be minor. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard.

VIII. Human Health Risk Assessment

A health risk assessment was conducted to determine if the proposed crematorium complies with the negligible risk requirement of MCA 75-2-215.

The environmental effects unrelated to human health were not considered in determining compliance with the negligible risk standard but were evaluated as required by the Montana Environmental Policy Act, in determining compliance with all applicable rules or other requirements requiring protection of public health, safety, welfare, and the environment.

Pursuant to ARM 17.8.770(1)(c), pollutants may be excluded from the human health risk assessment if DEQ determines that exposure from inhalation is the only appropriate pathway to consider in the human health risk assessment and if the ambient concentrations of the pollutants (calculated using the potential to emit; enforceable limits or controls) are less than the levels specified in Table 1 or Table 2 of ARM 17.8.770. Even though most of the estimated HAP species calculated in the emission inventory fell below the de minimis levels in Table 1 or Table 2 of ARM 17.8.770, DEQ elected to conduct the human health risk assessment by contemplating all the estimated HAP species. The results of the human health risk assessment pursuant to ARM 17.8.770 are shown in the following table and the results are discussed following the table and ScreenView inputs below.

HAP Category / Pollutant Name	CAS #	Fractio n of all HAPS	Calculated HAP Concentrati on	ARM 17.8.77 0 De Minimis Levels		
				Table 1 Cancer Annual	Table 2 Noncanc er Chronic Annual	Table 2 Noncanc er Acute Annual
<u>Heavy Metals</u>						
Antimony (less than)	7440360	1.90E-04	4.40E-09	N/A	2.00E-03	N/A
Arsenic (less than)	7440382	1.89E-04	4.37E-09	2.33E-05	5.00E-03	N/A
Beryllium	7440417	1.73E-05	3.99E-10	4.17E-05	N/A	N/A
Cadmium	7440439	1.39E-04	3.21E-09	5.56E-05	N/A	N/A
Chromium	7440473	3.77E-04	8.71E-09	8.33E-06	N/A	N/A
Chromium, hx	18540299	1.70E-04	3.93E-09	N/A	N/A	N/A
Cobalt (less than)	7440484	1.10E-05	2.55E-10	N/A	N/A	N/A
Lead	7439921	8.35E-04	1.93E-08	N/A	1.50E-02	N/A
Nickel	7440020	4.82E-04	1.11E-08	3.85E-04	2.40E-03	1.00E-02
Selenium	7782492	5.50E-04	1.27E-08	N/A	5.00E-03	2.00E-02
Zinc	7440666	4.45E-03	1.03E-07	N/A	N/A	N/A
<u>Polycyclic Organic Matter (POM)</u>						
2-methylnaphthalene	91576	9.87E-07	2.28E-11	N/A	N/A	N/A
3-methylchloranthrene (less than)	56495	3.70E-08	8.55E-13	N/A	N/A	N/A
7,12 Dibenz(a)anthracene (less than)		3.29E-07	7.60E-12	N/A	N/A	N/A
Anthracene (less than)	120127	4.93E-08	1.14E-12	N/A	N/A	N/A

Benzene	71432	8.63E-05	2.00E-09	1.20E-02	7.10E-01	N/A
Dichlorobenzene	25321226	4.93E-05	1.14E-09	9.09E-03	8.00E+00	N/A
Hexane	110543	7.40E-02	1.71E-06	N/A	2.00E+00	N/A
Napthalene	91203	2.51E-05	5.80E-10	N/A	1.40E-01	N/A
Phenanathrene	85018	6.99E-07	1.62E-11	N/A	N/A	N/A
Toluene	108883	1.40E-04	3.23E-09	N/A	4.00E+00	N/A
Acenaphthene	83329	1.40E-06	3.23E-11	N/A	N/A	N/A
Acenaphthylene	208968	1.54E-06	3.56E-11	N/A	N/A	N/A
Benzo(a)anthracene (less than)	56553	6.15E-08	1.42E-12	5.88E-05	N/A	N/A
Benzo(a)pyrene (less than)	50328	1.83E-07	4.24E-12	5.88E-05	N/A	N/A
Benzo(b)fluoranthene (less than)	205992	1.00E-07	2.32E-12	5.88E-05	N/A	N/A
Benzo(g,h,i)perylene (less than)	191242	1.83E-07	4.24E-12	N/A	N/A	N/A
Benzo(k)fluoranthene (less than)	207089	8.95E-08	2.07E-12	5.88E-05	N/A	N/A
Chrysene (less than)	218019	3.40E-07	7.87E-12	N/A	N/A	N/A
Dibenzo(a,h)anthracene (less than)	53703	8.01E-08	1.85E-12	5.88E-05	N/A	N/A
Fluorene	86737	5.26E-06	1.22E-10	N/A	N/A	N/A
Fluoranthene	206440	2.58E-06	5.97E-11	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene (less than)	193395	9.71E-08	2.24E-12	5.88E-05	N/A	N/A
Phenanthrene	85018	2.89E-05	6.67E-10	N/A	N/A	N/A
Pyrene	129000	2.04E-06	4.72E-11	N/A	N/A	N/A
<u>Dibenzofurans</u>			2.14E-12	2.63E-09	3.50E-08	N/A
1,2,3,4,6,7,8-Heptachlorodebenzofuran (less than)	67562394	2.88E-08	6.66E-13	N/A	N/A	N/A

1,2,3,4,7,8,9-Heptachlorodibenzofuran (less than)	55673897	1.75E-09	4.05E-14	N/A	N/A	N/A
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	1.20E-08	2.78E-13	N/A	N/A	N/A
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	1.07E-08	2.48E-13	N/A	N/A	N/A
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	2.11E-08	4.87E-13	N/A	N/A	N/A
2,3,4,6,7,8-Hexachlorodibenzofuran	60851345	4.34E-09	1.00E-13	N/A	N/A	N/A
1,2,3,7,8-Pentachlorodibenzofuran (less than)	57117416	1.85E-09	4.28E-14	N/A	N/A	N/A
2,3,4,7,8-Pentachlorodibenzofuran (less than)	57117314	5.58E-09	1.29E-13	N/A	N/A	N/A
2,3,7,8-Tetrachlorodibenzofuran	51207319	6.54E-09	1.51E-13	N/A	N/A	N/A
<u>Listed Non-POM Organic HAPs</u>						
Acetaldehyde	75070	1.64E-03	3.79E-08	4.55E-02	9.00E-02	N/A
Formaldehyde	50000	4.29E-04	9.91E-09	7.69E-03	3.60E-02	3.70E+00
<u>Listed Acids</u>						
Hydrogen chloride (hydrochloric acid)	7647010	9.08E-01	2.10E-05	N/A	2.00E-01	3.00E+01
Hydrogen fluoride	7664393	8.32E-03	1.92E-07	N/A	5.90E-02	5.80E+00
<u>Dioxins</u>						
2,3,7,8-tetrachlorodibenzo-p-dioxin	1746016	1.00E-09	2.31E-14	N/A	N/A	N/A
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	4.78E-08	1.10E-12	N/A	N/A	N/A

SUM of Hexachlorodibenzo-p-dioxin			3.39E-13	N/A	N/A	N/A
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	3922728 6	3.47E-09	8.01E-14	N/A	N/A	N/A
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	5765385 7	5.01E-09	1.16E-13	N/A	N/A	N/A
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	1940874 3	6.20E-09	1.43E-13	N/A	N/A	N/A
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	4032176 4	2.94E-09	6.79E-14	N/A	N/A	N/A

The following information was input into and generated by ScreenView in order to determine the HRA viability.

12/11/24

15:06:25

\*\*\* SCREEN3 MODEL RUN \*\*\*

\*\*\* VERSION DATED 13043 \*\*\*

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = 0.153717E-05  
STACK HEIGHT (M) = 1.5240  
STK INSIDE DIAM (M) = 0.3658  
STK EXIT VELOCITY (M/S) = 6.0960  
STK GAS EXIT TEMP (K) = 922.0389  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = 6.0960  
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.

BUOY. FLUX = 1.364 M\*\*4/S\*\*3; MOM. FLUX = 0.395 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*

\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

\*\*\*\*\*

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

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
500.	0.2775E-03	4	1.5	1.5	480.0	19.55	36.51	19.01 NO
600.	0.2307E-03	4	1.5	1.5	480.0	19.55	43.03	21.83 NO
700.	0.2068E-03	4	1.0	1.0	320.0	28.57	49.79	25.25 NO
800.	0.1974E-03	6	1.0	1.0	10000.0	28.88	28.72	14.30 NO
900.	0.1997E-03	6	1.0	1.0	10000.0	28.88	31.75	15.15 NO
1000.	0.1998E-03	6	1.0	1.0	10000.0	28.88	34.77	15.99 NO
1100.	0.1971E-03	6	1.0	1.0	10000.0	28.88	37.78	16.75 NO
1200.	0.1935E-03	6	1.0	1.0	10000.0	28.88	40.77	17.50 NO
1300.	0.1892E-03	6	1.0	1.0	10000.0	28.88	43.75	18.23 NO
1400.	0.1845E-03	6	1.0	1.0	10000.0	28.88	46.71	18.95 NO
1500.	0.1795E-03	6	1.0	1.0	10000.0	28.88	49.65	19.65 NO
1600.	0.1744E-03	6	1.0	1.0	10000.0	28.88	52.58	20.34 NO
1700.	0.1691E-03	6	1.0	1.0	10000.0	28.88	55.49	21.02 NO
1800.	0.1639E-03	6	1.0	1.0	10000.0	28.88	58.39	21.69 NO
1900.	0.1588E-03	6	1.0	1.0	10000.0	28.88	61.28	22.35 NO
2000.	0.1537E-03	6	1.0	1.0	10000.0	28.88	64.15	23.00 NO
2100.	0.1485E-03	6	1.0	1.0	10000.0	28.88	67.01	23.55 NO
2200.	0.1436E-03	6	1.0	1.0	10000.0	28.88	69.86	24.08 NO
2300.	0.1389E-03	6	1.0	1.0	10000.0	28.88	72.70	24.61 NO
2400.	0.1344E-03	6	1.0	1.0	10000.0	28.88	75.52	25.13 NO
2500.	0.1301E-03	6	1.0	1.0	10000.0	28.88	78.34	25.64 NO
2600.	0.1260E-03	6	1.0	1.0	10000.0	28.88	81.14	26.15 NO
2700.	0.1221E-03	6	1.0	1.0	10000.0	28.88	83.93	26.64 NO
2800.	0.1184E-03	6	1.0	1.0	10000.0	28.88	86.72	27.13 NO
2900.	0.1148E-03	6	1.0	1.0	10000.0	28.88	89.49	27.61 NO
3000.	0.1114E-03	6	1.0	1.0	10000.0	28.88	92.25	28.09 NO
3500.	0.9671E-04	6	1.0	1.0	10000.0	28.88	105.94	30.02 NO
4000.	0.8502E-04	6	1.0	1.0	10000.0	28.88	119.43	31.81 NO
4500.	0.7557E-04	6	1.0	1.0	10000.0	28.88	132.73	33.50 NO
5000.	0.6780E-04	6	1.0	1.0	10000.0	28.88	145.88	35.09 NO
5500.	0.6131E-04	6	1.0	1.0	10000.0	28.88	158.88	36.60 NO
6000.	0.5583E-04	6	1.0	1.0	10000.0	28.88	171.76	38.04 NO
6500.	0.5115E-04	6	1.0	1.0	10000.0	28.88	184.51	39.43 NO
7000.	0.4711E-04	6	1.0	1.0	10000.0	28.88	197.15	40.76 NO
7500.	0.4368E-04	6	1.0	1.0	10000.0	28.88	209.68	41.90 NO
8000.	0.4066E-04	6	1.0	1.0	10000.0	28.88	222.12	43.00 NO
8500.	0.3800E-04	6	1.0	1.0	10000.0	28.88	234.47	44.06 NO

9000.	0.3564E-04	6	1.0	1.0	10000.0	28.88	246.73	45.08	NO
9500.	0.3352E-04	6	1.0	1.0	10000.0	28.88	258.91	46.07	NO
10000.	0.3162E-04	6	1.0	1.0	10000.0	28.88	271.02	47.04	NO
15000.	0.1975E-04	6	1.0	1.0	10000.0	28.88	388.51	55.44	NO
20000.	0.1429E-04	6	1.0	1.0	10000.0	28.88	501.01	60.80	NO
25000.	0.1110E-04	6	1.0	1.0	10000.0	28.88	609.80	65.32	NO
30000.	0.9019E-05	6	1.0	1.0	10000.0	28.88	715.63	69.28	NO
40000.	0.6572E-05	6	1.0	1.0	10000.0	28.88	920.26	74.90	NO
50000.	0.5139E-05	6	1.0	1.0	10000.0	28.88	1117.45	79.58	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 500. M:

500.	0.2775E-03	4	1.5	1.5	480.0	19.55	36.51	19.01	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	0.2775E-03	500.	0.

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

No individual pollutant concentration exceeds the Cancer Risk threshold of 1.00E-06 and the sum of all Cancer Risks concentrations does not exceed 1.00E-05. Further, the sum of the Chronic Non-cancer Reference Exposure Level hazard quotients is less than 1.0. Therefore, compliance with the negligible risk requirement as outlined in ARM 17.8.770 is demonstrated. Further, such a determination was made assuming 8,760 hours of operation per year of the crematory and conservative emissions estimations. The presence or absence of this facility in the affected area would not be expected to cause a discernable change in human health risks in this area.

Based on the information provided and the conditions established in MAQP #5324-00, DEQ determined that the impact from this permitting action will be minor. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard and will not result in any unacceptable risk to human health.



IX. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, DEQ conducted a private property taking and damaging assessment which is located in the attached environmental assessment and is located in the attached environmental assessment.

X. Environmental Assessment

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



# FINAL ENVIRONMENTAL ASSESSMENT

February 6, 2024

Air Quality Bureau  
 Montana Department of Environmental Quality

PROJECT/SITE NAME: <u>Ingram Veterinary Clinic, PLLC</u>	
APPLICANT/COMPANY NAME: <u>Ingram Veterinary Clinic, PLLC</u>	
PROPOSED PERMIT/LICENSE NUMBER: <u>5324-00</u>	
LOCATION: Section 23, Township 22 North, Range 30 West	COUNTY: <u>Sanders</u>
PROPERTY OWNERSHIP:	FEDERAL <input type="checkbox"/> STATE <input type="checkbox"/> PRIVATE <input checked="" type="checkbox"/>

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## PROJECT OVERVIEW

COMPANY NAME: Ingram Veterinary Clinic, PLLC  
EA DATE: February 6, 2025  
SITE NAME: Ingram Veterinary Clinic, PLLC  
MAQP#: 5324  
Version #: 00  
Application Received Date: November 12, 2024

## Location

Township 22 North, Range 30 West, Section 23

County: Sanders

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 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 Draft 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

Ingram Veterinary Clinic, PLLC (IVC) has applied for a Montana Air Quality Permit (MAQP) under the Clean Air Act of Montana. The MAQP regulates a new facility with an incinerator to cremate animal remains. 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 Sanders 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; 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 Proposed Action**

Proposed Action	
<b>General Overview</b>	This permitting action regulates a new facility with the addition of an incinerator to cremate animal remains
<b>Duration &amp; Hours of Operation</b>	<b>Construction:</b> Approximately one day <b>Operation:</b> Continuous operation
<b>Estimated Disturbance</b>	Minor land disturbance would occur from this permitting action with the addition of the concrete slab for the location of the incinerator.
<b>Construction Equipment</b>	The following equipment will be utilized: One excavator, one skid steer, one forklift, and one concrete truck.
<b>Personnel Onsite</b>	<b>Construction:</b> One construction personnel will be onsite for the duration of the construction. <b>Operation:</b> Approximately one day.
<b>Location and Analysis Area</b>	<b>Location:</b> Section 23, Township 22 North, Range 30 West, in Sanders County, Montana <b>Analysis Area:</b> The area being analyzed as part of this environmental review includes the immediate project area (Figure 1), as well as neighboring lands surrounding the analysis area, as reasonably appropriate for the impacts being considered.
The applicant is required to comply with all applicable local, county, state, and federal requirements pertaining to the following resource areas.	
<b>Air Quality</b>	The applicant proposes to acquire a new air quality permit for the addition of an incinerator to this existing facility.
<b>Water Quality</b>	This permitting action would not affect water quality. IVC is required to comply with the applicable local, county, state and federal requirements pertaining to water quality.
<b>Erosion Control and Sediment Transport</b>	This permitting action would not affect erosion control and sediment transport. IVC 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 permitting action would not affect solid waste in the area. IVC is required to comply with the applicable local, county, state and federal requirements pertaining to solid waste.
<b>Cultural Resources</b>	This permitting action would not affect cultural resources. IVC is required to comply with the applicable local, county, state and federal requirements pertaining to cultural resources.

<b>Hazardous Substances</b>	This permitting action would not contribute to any hazardous substances. IVC is required to comply with the applicable local, county, state and federal requirements pertaining to hazardous substances.
<b>Reclamation</b>	This permitting action would not require any reclamation.

Cumulative Impact Considerations	
<b>Past Actions</b>	There are no past actions as this permitting action is to permit a new facility.
<b>Present Actions</b>	This permitting action regulates a new facility with an incinerator to cremate animal remains
<b>Related Future Actions</b>	DEQ is not currently aware of any future projects from IVC for this facility. The owner currently holds Montana Air Quality Permit (MAQP) #4456-01 which is currently being revoked under the request of the facility. Any future projects would be subject to a new permit application.

See Figure 1 below for the project location of the IVC site.

Figure 1: Site Location Map



## 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 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. When analyzing duration, please include a specific range of time.
- 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 IVC facility area is characterized by the Montana Bureau of Mines and Geology (MBMG) as the Middle Proterozoic (Harrison, J.). The proposed project area is currently used as an existing veterinary clinic. The addition of the incinerator is not first-time disturbance for the facility. The area near the IVC facility site consists of mainly residences and an abandoned rock-quarry.

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

The permit application included additional information like analysis of aerial photography, topographic maps, information provided by IVC and other research tools. This permitting action would not be considered a new disturbance, as the land was previously disturbed by human activity which resulted in the existing facility. An incinerator is being added on a new concrete slab, but this is not considered first time disturbance. Therefore, no direct impacts would be expected because of the proposed project.

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

No secondary impacts to geology, stability, and moisture would be expected because this action is occurring within the existing IVC property boundary and no new disturbance is occurring.

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

No cumulative impacts to geology, stability, and moisture would be expected because of this permitting action, as it will be taking place within an already existing facility footprint.

## 2. Water Quality, Quantity, and Distribution

The IVC facility is located approximately 0.5 miles from the Clark Fork River, a popular recreational area in the region. Discharges would not be released to ground or surface water. No fragile or unique water resources or values are present.

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

IVC has not submitted any other permit applications that DEQ is aware of related to this proposed permitting action.

No fragile or unique water resources or values are present in the area affected by the proposed project. Further, no water use or any form of discharge to surface or groundwater would occur because of the proposed project. Therefore, no direct impacts to water quality, quantity or distribution would be expected because of the proposed project.

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

During operations, discharges would not be released to ground or surface water because of the proposed project. Further, as permitted, the proposed project would not be expected to cause or contribute to a violation of the applicable primary or secondary NAAQS. See permit analysis for more detailed information regarding air quality impacts. Secondary NAAQS provide public welfare



protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. Therefore, no secondary impacts to water quality would be expected because of the proposed project. No new water resources would be required for normal operations of the affected new equipment. No secondary impacts to water quality, quantity, and distribution would be expected from this permitting action.

***Cumulative Impacts:***

No major cumulative impacts to water quality, quantity, and distribution are anticipated from this permitting action. IVC has not submitted any other permit applications that DEQ is aware of. Further, DEQ is unaware of any related actions under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures.

### 3. Air Quality

For details about the existing air quality, see Section V of the Permit Analysis. This facility is located in the Unclassifiable/Attainment category, with a designated area for a PM<sub>10</sub> Maintenance Plan nearby.

***Direct Impacts:***

Expected emissions from the construction and operation of this permitting action are shown in the Permit Analysis Section within the Emission Inventory. An assessment of greenhouse gases (GHGs) is described in Section 23 of this draft EA.

Air quality standards, set by the federal government and DEQ are enforced by DEQ's Air Quality Bureau (AQB) and allow for air pollution at the levels permitted by the MAQP. The IVC facility has emissions including particulate matter (PM) species, oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOCs), Hazardous Air Pollutants (HAPs), and GHG emissions.

Air pollution control equipment must be operated at the maximum design for which it is intended. ARM 17.8.752(2). Limitations would be placed on the allowable emissions for the new emission sources. DEQ conducted a Best Available Control Technology (BACT) analysis and made a BACT determination for each emitting unit related to this permitting action. The proposed emission limits were reviewed by DEQ and incorporated into MAQP #5324-00, if necessary, as federally enforceable conditions. These permit limits cover NO<sub>x</sub>, CO, SO<sub>2</sub>, VOCs, PM, and HAPs with associated ongoing compliance demonstrations, as determined by DEQ.

Air quality standards are regulated by the federal Clean Air Act, 42 U.S.C. 7401 *et seq.* and the Montana CAA, § 50-40-101 *et seq.*, MCA, and are implemented and enforced by DEQ's AQB. As stated above, IVC is required to comply with all applicable state and federal laws. Minor air quality impacts would be anticipated from the proposed action.

**Secondary Impacts:**

Impacts to air quality from the operation of the IVC facility are to be restricted by an MAQP and therefore should have minor secondary air quality impacts.

**Cumulative Impacts:**

Cumulative impacts to air quality from the operation of the IVC facility are to be restricted by an MAQP and therefore should have minor air quality impacts. Minor impacts are anticipated from this permitting action. The nearby area also has other stationary sources, Phillips 66- Thompson Falls, MAQP #2972-03, the Thompson Falls Sawmill, MAQP#4643-01, and the US Antimony Mine and Mill, MAQP #2973-04, that contributes to the air quality in the area. The facility also holds MAQP#4456-01, which is currently being revoked by the request of the owner.

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

No fragile or unique resources of values, or resources of statewide or societal importance, are present in the affected area. The area around the IVC facility is residential, with an abandoned rock-quarry nearby.

DEQ conducted research using the Montana Natural Heritage Program (MTNHP) website and ran a query titled “Environmental Summary Report” dated November 20, 2024, which identified the following plant Species of Concern (SOC) located in or near the affected facility: Dwarf woolly-heads, Pointed Broom Sedge, Panic Grass, Western Pearl-flower, Pale-yellow Jewel-weed, Coville's Rush, Short-flowered Monkeyflower, Floriferous Monkeyflower, Flatleaf Bladderwort, Western Moonwort, Least Moonwort, Slender Wintergreen, Linearleaf Moonwort, Crawe's Sedge, Idaho Lovage, Tapertip Onion, Upward-lobed Moonwort, Wavy Moonwort, Lanceleaf Moonwort, Stalked Moonwort, Clustered Lady's-slipper, Roundleaf Sundew, Beaked Spikerush, Giant Helleborine, Water Star-grass, Spiny-spore Quillwort, Northern Bog Clubmoss, Small-headed Tarweed, Blunt-leaved Pondweed, Yerba Buena, Sandweed, Peculiar Moonwort, Diamond Clarkia, Small Yellow Lady's-slipper, Scribner's Panic Grass, Linear-leaf Fleabane, Slender Cottongrass, Northern Toadflax, Water Bulrush, and Tufted Club-rush.

The proposed action would be located within the existing footprint of the IVC property.

The polygon area analyzed using the MTNHP website produces an area inherently larger than the specific disturbance area, so some additional species may be reported that are not necessarily present in the affected area, but nearby.

No important plant areas are present in the area.

**Direct Impacts:**

The information provided above is based on the information that DEQ had available at the time of draft EA preparation and information provided by the applicant. The permit application provided an analysis of aerial photography, topographic maps, geologic maps, soil maps, and

other research tools. Because the proposed action would occur within the IVC facility property boundary, minor impacts to vegetation cover are anticipated, as this permitting action is not considered first time disturbance.

***Secondary Impacts:***

No secondary impacts to vegetation cover, quantity, and quality are expected since no new land disturbance would occur because of this permitting action, therefore no vegetation would be affected.

***Cumulative Impacts:***

No cumulative impacts to vegetation cover, quantity, and quality are expected from this permitting action as it did not reduce the amount of vegetation cover.

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

As described in Section 4., Vegetation Cover, the affected area is represented by residential and industrial operations and DEQ conducted research using the MTNHP website and ran the query titled “Environmental Summary Report” dated November 20, 2024, which identified the following animal species of concern (SOC): Bull Trout, Westslope Cutthroat Trout, Bald Eagle, Grizzly Bear, Great Blue Heron, Western Toad, Fir Pinwheel, Burbot, Yuma Myotis, Fisher, Townsend's Big-eared Bat, Western Pygmy Shrew, Evening Grosbeak, Pileated Woodpecker, Western Screech-Owl, Northern Alligator Lizard, Western Skink, Suckley Cuckoo Bumble Bee, Northern Rocky Mountains Refugium Stonefly, Meesia Moss, Rufous Hummingbird, Veery, Long-eared Myotis, Barrow's Goldeneye, Black-backed Woodpecker, Cassin's Finch, Hooded Merganser, Coeur d'Alene Salamander, A Caddisfly, Britton's Dry Rock Moss, Harlequin Duck, Lewis's Woodpecker, Yellow-billed Cuckoo, Flammulated Owl, Canada Lynx, Fringed Myotis, Little Brown Myotis, Long-legged Myotis, North American Porcupine, Silver-haired Bat, Wolverine, Western Pearlshell, Hoary Bat, American Bittern, Tennessee Warbler, Varied Thrush, Monarch, American Goshawk, Brown Creeper, Clark's Nutcracker, Great Gray Owl, Trumpeter Swan, A Caddisfly, Clearwater Roachfly, Black Swift, Bobolink, Common Poorwill, Long-billed Curlew, and Lake Trout.

The polygon area analyzed using the MTNHP website produces an area inherently larger than the specific disturbance area, so some additional species may be reported that are not necessarily present within the IVC property, but nearby. Further, because the proposed action would occur within the footprint of the existing IVC facility, and the affected area is residential/industrial in nature, the identified Species of Concern would not be expected to locate within or use the affected area for any part of their life cycle.

No important bird areas are present on the IVC property.

***Direct Impacts:***

The potential impact to terrestrial, avian and aquatic life and habitats would be negligible, due

to the long-term residential and veterinary clinic nature of the affected area.

***Secondary Impacts:***

Because the proposed action would occur within the existing footprint of the IVC facility, no secondary impacts to terrestrial, avian and aquatic life and habitats would be stimulated or induced by the direct impacts analyzed above as all actions are occurring within property boundaries and this is not considered first time disturbance

***Cumulative Impacts:***

No cumulative impacts to terrestrial, avian and aquatic life and habitats would be stimulated or induced by the direct impacts analyzed above. The IVC facility is located on land that is already in use by the facility.

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

As described in Section(s) 4 and 5 above, DEQ conducted a search using the MTNHP webpage. The search used a polygon that overlapped the site and produced the list of species of concern identified in Section 5. The project would not be in core, general, or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: <http://sagegrouse.mt.gov>.

***Direct Impacts:***

Among the SOC identified by the MTNHP, these species would not be expected to be displaced by the proposed action as the land where the permitting action would occur is owned by IVC and has an existing veterinary clinic onsite. Therefore, any potential direct impacts would be short-term and negligible.

***Secondary Impacts:***

The proposed action would have no secondary impacts to the identified species of concern because the permit conditions are protective of human and animal health and welfare, and the affected area is currently used by IVC and would not change the effect to existing habitats that may be present in the affected area. Secondary NAAQS provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

***Cumulative Impacts:***

The proposed action would have minor cumulative impacts to environmental resources because the permit conditions are protective of human and animal health and all lands involved in the proposed action are currently used for industrial operations and would not change the effect to the environment outside of the original construction of the facility.

## 7. Historical and Archaeological Sites

The Montana State Historic Preservation Office (SHPO) was contacted to conduct a file search for historical and archaeological sites within Section 23, Township 22 North, Range 30 West, which includes the area affected by the proposed project. SHPO provided a letter dated November 21, 2024, stating there have been a two previously recorded sites within the designated search location, but none located within the proposed project area. One of the two sites was a Historic Railroad, with an eligible status for inclusion in the National Register of Historic Places, and the other site was a Historic Railroad Bridge with an undetermined status. It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, SHPO recommends that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

However, should structures need to be altered, or if cultural materials are inadvertently discovered during this proposed action, SHPO requests their office be contacted for further investigation.

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

Although the search conducted by SHPO identified recorded cultural sites/resources in the search area, none of the identified sites are located on or near the IVC property. Therefore, no impacts to the identified sites would be expected because of the proposed project. Further, because the proposed project would occur within the footprint of the existing IVC operations, the proposed project would not be expected to impact any new, previously unrecorded cultural resources that may exist in the affected area. Therefore, no direct impacts to historical and archaeological sites would be expected because of the proposed project.

### Secondary Impacts:

No secondary impacts to historical and archaeological sites are anticipated since the proposed action is located on land currently in use by IVC.

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

No cumulative impacts to historical and archaeological sites are anticipated since the proposed action is located on land currently in use by IVC.

## 8. Aesthetics

The proposed action would occur on private land owned by IVC and in an area mostly surrounded by residents, with a nearby abandoned rock-quarry. The closest residence is located approximately 500 yards away from the south part of the facility. Construction of the proposed project would last for approximately one day.

***Direct Impacts:***

IVC's visual profile would change with the addition of the cremation unit, as it is going to be installed outside, on a new concrete pad with a metal roof covering the unit. The concrete pad will be approximately 12 feet by 12 feet, but will be on property already owned by IVC, therefore this is not considered first time disturbance, as the facility is already in existence prior to the addition of the cremation unit/incinerator. The incinerator will include the addition of a stack, which will change the overall aesthetics of the facility, which will be a long-term impact. There would be no increase in noise levels from this permitting action, aside from the one-day construction of the addition of the concrete pad/installation of the cremation unit. Once construction was completed, noise levels would return to their normal level of daily operation. Therefore, any direct impacts would be long-term and minor, and consistent with existing impacts.

***Secondary Impacts:***

There would be minor secondary impacts on the aesthetics due to the addition of the stack and concrete pad with associated cremation unit. Impacts would be long-term and minor.

***Cumulative Impacts:***

Long-term impacts will occur with the addition of the concrete pad and cremation unit that were previously not on the facility. Minor and long-term cumulative impacts are anticipated with the increase from the addition of the concrete pad and cremation unit with associated stacks. This is not considered first time disturbance as the facility is already in existence prior to the addition of the cremation unit/incinerator.

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

The site is located on land owned by IVC. See Sections 2, 3, and 4 of this EA for details regarding land, water, and air impacts.

***Direct Impacts:***

There would be a minor increase in demand for the environmental resources of land, air, and energy for these actions. Land usage was converted to be used for the addition of the incinerator. There will be minor impacts on air and energy as the emissions increased with the addition of the incinerator, therefore the energy usage also increased with these actions. Any direct impacts would be long-term and minor.

***Secondary Impacts:***

No secondary impacts to demands on land, water, air, and energy are anticipated as a result of this permitting action due to this site already being industrial in nature.

***Cumulative Impacts:***

Minor cumulative impacts to demands on land, water, air, and energy are anticipated as a result

of this permitting action. Minor cumulative impacts are anticipated with the addition of the incinerator, in terms of land, air, and energy, as this causes an increase demand on all of those areas.

## 10. Impacts on Other Environmental Resources

The site is currently an existing veterinary clinic.

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

No other environmental resources are known to have been identified in the area beyond those discussed above. Hence, there is no impact to other environmental resources.

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

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

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

No cumulative impacts to other environmental resources are anticipated as a result of the proposed permitting action.

## 11. Human Health and Safety

The applicant would be required to adhere to all applicable state and federal safety laws. The Occupational Safety and Health Administration (OSHA) has developed rules and guidelines to reduce the risks associated with this type of labor. Members of the public would not be allowed in the immediate proximity to the project during construction or operations and access to the public would continue to be restricted to this property.

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

Negligible changes in impacts to human health and safety are anticipated as a result of this project action due to the industrial nature of the facility.

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

No secondary impacts to human health and safety are anticipated as a result of the proposed permitting action due to the industrial nature of the facility. Secondary NAAQS provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

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

No cumulative impacts to human health and safety are anticipated as a result of the proposed permitting action due to the industrial nature of the facility.

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

This site is used by IVC, it is privately owned land by IVC, and is an existing veterinary clinic.

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

This permitting action would not change the purpose of the property as it is currently being used for veterinary purposes, with it being an existing veterinary clinic. Any impacts on industrial, commercial, and agricultural activities and production in the area would be long-term and minor due to the addition of the incinerator, which would increase industrial production of the facility and the affected area.

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

No secondary impacts to industrial, commercial, and agricultural activities and production are anticipated as a result of the proposed permitting action as this property is already an existing veterinary facility.

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

The cumulative impacts are minor as the facility currently used for veterinary purposes on land that was already used for industrial purposes but will see an increase from the addition of the incinerator.

## 13. Quantity and Distribution of Employment

There currently are 10 permanent jobs at the IVC site. No new full-time jobs would result from this permitting action. Approximately one day of construction will occur with this permitting action. One construction personnel will be onsite to complete the construction.

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

The proposed action would be expected to have no impact on the overall distribution of employment as the facility as no new, additional long-term employment would be expected because of this permitting action.

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

No secondary impact to the quality and distribution of employment is expected on long-term employment from the proposed action as no new employees are being added from this permitting action.

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

There would be no cumulative impacts on employment for this permitting action because no new employees would be added as a result of this permitting action. Once construction was completed, the one construction personnel onsite would no longer be onsite.



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

Local, state, and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, from the companies, employees, or landowners benefiting from this operation.

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

The proposed action would be expected to have long-term, minor impacts on the local and state tax base and tax revenues due to the addition of the cremation unit/incinerator and associated business conducted.

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

IVC would continue to be responsible for accommodation of any increased taxes associated with the operation of the modified facility. Minor secondary impacts to local and state tax base and tax revenues are anticipated as a result of the proposed permitting action.

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

Minor impacts to local and state tax base and tax revenues were anticipated with the construction and operation of a new facility in the area. IVC would continue to be responsible for accommodation of any increased taxes associated with the operation of the modified facility. Local, state, and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, from the companies, employees, or landowners benefiting from this operation. Therefore, any cumulative impacts would be minor, consistent with existing impacts in the affected area.

## 15. Demand for Government Services

The area surrounding the IVC site consists of residences and an abandoned rock-quarry.

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

The air quality permit has been prepared by state government employees as part of their day-to-day, regular responsibilities. Therefore, any direct impacts to demands for government services would be short-term, consistent with existing impacts, and negligible. Compliance review and assistance oversight by DEQ AQB would be conducted in concert with other area activity when in the vicinity of the proposed project. Therefore, any direct impacts would be long-term and negligible to minor, mainly through increased regulatory oversight by DEQ.

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

Initial and ongoing compliance inspections of facility operations would be accomplished by state government employees as part of their typical, regular duties and required to ensure the facility is operating within the limits and conditions listed in the air quality permit. Therefore, any secondary impacts to demands for government services would be long-term, consistent with existing impacts, and negligible.

***Cumulative Impacts:***

The air quality permit has been prepared by state government employees as part of their day-to-day, regular responsibilities. Following construction of the proposed facility, initial and ongoing compliance inspections of facility operations would be accomplished by state government employees as part of their typical, regular duties and required to ensure the facility is operating within the limits and conditions listed in the air quality permit. Therefore, any cumulative impacts to demands for government services would be short- and long-term, consistent with existing impacts, and negligible. Minor cumulative impacts are anticipated on government services with the proposed action and a minimal increase in impact would occur from the permitting and compliance needs associated with this permitted facility.

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

A review was conducted on November 20, 2024, to identify any locally adopted environmental plans or goals. A City of Thompson Falls Downtown Master Plan was located on the City of Thompson Falls Website. This serves as a guide to improving economic conditions and aesthetics to the downtown area of the city. Thompson Falls also received two USDA Rural Development loans to connect an additional 137 parcels to the city’s upgraded lagoon wastewater treatment system recently.

***Direct Impacts:***

IVC’s facility is on property owned by IVC. This permitting action would not affect any current locally adopted environmental plans or goals in the affected area; therefore, no direct impacts would be expected because of the proposed project.

***Secondary Impacts:***

No locally adopted environmental plans and goals in the area will be affected by the proposed action. Therefore, no secondary impacts would be expected because of the proposed project.

***Cumulative Impacts:***

DEQ conducted a search of the City of Thompson Falls website on November 20, 2024. A master plan for the downtown area of Thompson Falls was found and there would be no affect to any environmental plans or goals from this permitting action. Therefore, no cumulative impacts to locally adopted environmental plans and goals are anticipated as a result of the proposed permitting action.

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

The IVC facility is located approximately 50 miles from the closest wilderness area, the Cabinet Mountain Wilderness Area. It is located approximately 100 miles from the Mission Mountains Wilderness Area and approximately 100 miles from the Mission Mountains Tribal Wilderness Area. IVC is located approximately 0.5 miles from the Clark Fork River.

***Direct Impacts:***

There would be no impacts to the access to wilderness activities as none are in the vicinity of the proposed action. Therefore, no direct impacts to access to and quality of wilderness activities would be expected because of the proposed project. The affected area is an existing facility with little to no recreational opportunities exist in the area affected by the proposed project. Therefore, no direct impacts would be expected. Access to the wilderness areas would not change with this permitting action. Recreation along the Clark Fork River would not be impacted by this permitting action. The river is not located in a close enough proximity for recreationalists to see any change in aesthetics with the addition of the cremation unit and associated pad, with a stack. Therefore, no direct impacts would be expected.

***Secondary Impacts:***

No wilderness areas are located nearby or accessed through this land owned by IVC. The nearest designated wilderness area is the Cabinet Mountain Wilderness Area, located approximately 50 miles from the affected site. Therefore, no secondary impacts to access to and quality of wilderness activities would be expected because of the proposed project. No secondary impacts to access and quality of recreational and wilderness activities are anticipated as a result of the proposed permitting action which is wholly contained within the boundary of the IVC property.

***Cumulative Impacts:***

No wilderness areas are located nearby or accessed through this land owned by IVC. The nearest designated wilderness area is the Cabinet Mountain Wilderness Area, located approximately 50 miles from the affected site. Therefore, no cumulative impacts to access to and quality of wilderness activities would be expected because of the proposed project. No cumulative impacts to access and quality of recreational and wilderness activities are anticipated as a result of the proposed permitting action which is wholly contained within the boundary of the IVC property.

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

The City of Thompson Falls, Montana has approximately 1,336 residents (U.S. Census Bureau).

***Direct Impacts:***

IVC currently employs 10 full time employees at this facility. This permitting action would not be expected to increase or decrease employment at the IVC facility, add to the existing population of nearby town of Thompson Falls and/or the surrounding area, or require additional housing. Therefore, no direct impacts to density and distribution of population and housing are anticipated because of the proposed action.

***Secondary Impacts:***

IVC would employ existing staff to operate the facility and the proposed project would not be expected to otherwise result in an increase or decrease in the local population. No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed permitting action.

***Cumulative Impacts:***

IVC would employ existing staff for the proposed project and existing IVC employees would operate the facility following the completion of the proposed project. Therefore, the proposed project would not be expected to result in an increase or decrease in the local population. No cumulative impacts to density and distribution of population and housing are anticipated as a result of the proposed permitting action as no new employees would be added as result of this permitting action.

**19. Social Structures and Mores**

Based on the required information provided by IVC, DEQ is not aware of any native cultural concerns that would be affected by the proposed action on this existing facility. This facility is located within 50 miles of the Flathead Reservation.

***Direct Impacts:***

The proposed action is located on an existing veterinary site and no changes to or disruption of native or traditional lifestyles would be expected because of the proposed project. Therefore, no impacts to social structure and mores are anticipated.

***Secondary Impacts:***

No secondary impacts to social structures and mores are anticipated as a result of the proposed actions due to the existing veterinary nature of the facility.

***Cumulative Impacts:***

No cumulative impacts to social structures and mores are anticipated as a result of the proposed actions. Cumulative impacts are anticipated to be negligible as the location is already in veterinary use, and all permitting actions are occurring within existing structures.

**20. Cultural Uniqueness and Diversity**

Based on the required information provided by IVC, DEQ is not aware of any unique qualities of the area that would be affected by the proposed action at this existing facility.

***Direct Impacts:***

IVC would employ existing staff to accommodate the proposed action and thus the proposed project would not be expected to result in an increase or decrease in the local population. Therefore, no direct impacts to the existing cultural uniqueness and diversity of the affected population would be expected because of the proposed project.

***Secondary Impacts:***

The existing nature of the area affected by the proposed project is a veterinary clinic. Further, IVC would employ existing staff to accommodate changes under the proposed

action and thus the proposed project would not be expected to result in an increase or decrease in the local population. Therefore, no secondary impacts to the existing cultural uniqueness and diversity of the affected population are anticipated as a result of the proposed action.

**Cumulative Impacts:**

IVC would employ existing staff to accommodate changes under the proposed action and thus the proposed project would not be expected to result in an increase or decrease in the local population. Therefore, no cumulative impacts to the existing cultural uniqueness and diversity of the affected population are anticipated as a result of the proposed action.

**21. Private Property Impacts**

The proposed action would take place on privately-owned land. The analysis below in response to the Private Property Assessment Act indicates no impact. DEQ does not plan to deny the application or impose conditions that would restrict the regulated person’s use of private property so as to constitute a taking. Further, if the application is complete, DEQ must take action on the permit pursuant to § 75-2-218(2), MCA. Therefore, DEQ does not have discretion to take the action in another way that would have less impact on private property—its action is bound by a statute.

There are private residences in the nearby area of the proposed action. The closest residence, including homes or structures, is located approximately 500 yards south of the project site.

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

YES	NO	
		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, DEQ determined there are no taking or damaging implications associated with this permit action.

## 22. Other Appropriate Social and Economic Circumstances

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

DEQ is unaware of any other appropriate short-term social and economic circumstances in the affected area that may be directly affected by the proposed project. Therefore, no further direct impacts would be anticipated.

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

The proposed project would allow for the operation of an animal remains incinerator onsite. Any impacts to air quality would be long-term and minor.

DEQ is unaware of any other appropriate short-term social and economic circumstances in the affected area that may be directly affected by the proposed project. Therefore, no further secondary impacts would be anticipated.

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

DEQ is unaware of any other appropriate short-term social and economic circumstances in the affected area that may be directly affected by the proposed project. Therefore, no further cumulative impacts would be anticipated.

## 23. Greenhouse Gas Assessment

Issuance of this permit would authorize IVC to operate an incinerator using propane for fuel, which would emit a limited amount of greenhouse gases.

The analysis area for this resource is limited to the activities regulated by the issuance of MAQP#5324-00, which is to permit the facility with the addition of an incinerator. The amount of propane fuel utilized at this site may be impacted by a number of factors including seasonal weather impediments and equipment malfunctions. To account for these factors DEQ has calculated the maximum amount of emissions using 8760 hours per year of operation.

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 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.

The combustion of diesel fuel at the site would release GHGs primarily being carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) and much smaller concentrations of uncombusted fuel components including methane (CH<sub>4</sub>) and other volatile organic compounds (VOCs).

DEQ has calculated GHG emissions using the EPA Simplified GHG Calculator version May 2023, for the purpose of totaling GHG emissions. This tool totals carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), and methane (CH<sub>4</sub>) and reports the total as CO<sub>2</sub> equivalent (CO<sub>2</sub>e) in metric tons CO<sub>2</sub>e. The calculations in this tool are widely accepted to represent reliable calculation approaches for developing a GHG inventory.

***Direct Impacts:***

Operation of the propane fueled incinerator at the IVC facility would produce exhaust fumes containing GHGs.

DEQ estimates that approximately 865 metric tons of CO<sub>2</sub>e would be produced per year. To account for variability due to the factors described above, DEQ has calculated the maximum amount of emissions using a factor of 8760 hours per year for operation. Using the Environmental Protection Agency's (EPA) simplified GHG Emissions Calculator for mobile sources, approximately 865 metric tons of CO<sub>2</sub>e would be produced per year.

***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).

Per EPA's website "Climate Change Indicators", the lifetime of carbon dioxide cannot be represented with a single value because the gas is not destroyed over time. The gas instead moves between air, ocean, and land mediums with atmospheric carbon dioxide remaining in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments. Methane remains in the atmosphere for approximately 12 years. Nitrous oxide has the potential to remain in the atmosphere for about 109 years (EPA, Climate Change Indicators). The impacts of climate change throughout the southeastern area of Montana include changes in flooding and drought, rising temperatures, and the spread of invasive species (BLM 2021).

### ***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 with 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 GHG emissions by sector and GHG 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 the estimated total annual greenhouse gas inventory by year. The SIT data from EPA is currently only updated through the year 2021, as it takes several years to validate and make new data available within revised modules. DEQ maintains a copy of the output results of the SIT.

DEQ has determined that the use of the default data provides a reasonable representation of the GHG inventory for all of the state sectors, and an estimated total annual GHG inventory by year. At present, Montana accounts for 47.77 million metric tons of CO<sub>2</sub>e based on the EPA SIT for the year 2021. This project may contribute up to 865 metric tons per year of CO<sub>2</sub>e. The construction phase of this project would contribute less than one metric ton of CO<sub>2</sub>e per year. The estimated emission of 865 metric tons of CO<sub>2</sub>e from this project would contribute 0.002% of Montana’s annual CO<sub>2</sub>e emissions.

GHG emissions that would be emitted as a result of the proposed activities would add to GHG emissions from other sources. The No Action Alternative would not contribute approximately any GHG emissions, as the proposed No Action Alternative would be to deny the permit and not allow the operation of the cremation unit on site. The current land use of the area is industrial as it is an existing facility.

### **Reference**

Bureau of Land Management (BLM) 2021. Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends from Coal, Oil, and Gas Exploration and Development on the Federal Mineral Estate. Available at: <https://www.blm.gov/content/ghg/2021/>. Accessed February 28, 2024.



## **PROPOSED ACTION ALTERNATIVES:**

### **No Action Alternative:**

In addition to the analysis above for the proposed action, DEQ is considering a “no action” alternative. The “no action” alternative would deny the approval of the proposed permitting action. 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.

### **Other Ways to Accomplish the Action:**

In order to meet the project objective to permit this facility with the addition of the incinerator has no other way to accomplish this action outside of not having an incinerator on-site, which would then result in the facility not needing an MAQP.

If the applicant demonstrates compliance with all applicable rules and regulations as required for approval, the “no action” alternative would not be appropriate. Pursuant to, § 75-1-201(4)(a), (MCA) DEQ “may not withhold, deny, or impose conditions on any permit or other authority to act based on” an environmental assessment.

## **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:

Application for MAQP #5324-00, EPA State Inventory Tool, the EPA GHG Calculator Tool, the Montana Natural Heritage Program Website, the Montana Cadastral Mapping Program, the State of Montana GIS Mapping Program, the City of Thomson Falls website, and the State Historical Preservation Office.

## **PUBLIC INVOLVEMENT:**

The public comment period for this permit action was January 3, 2025, through February 3, 2025.

## **OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION:**

The proposed project would be located on private land. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, or federal agency jurisdiction.

This environmental review analyzes the proposed project submitted by the Applicant. The project would be negligible and would be fully reclaimed to the permitted postmining land

uses at the conclusion of the project and thus would not contribute to the long-term cumulative effects of mining in the area.

## **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 department 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**

DEQ finds that this action results in minor impacts to air quality and GHG emissions in Sanders 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 not result in first time disturbance at the IVC facility.

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 major impacts to view-shed aesthetics as the incinerator and associated stack, would be constructed where there previously was not one. However, because the cremation unit would be installed within the footprint of the existing IVC facility property, any impacts would be consistent with existing impacts.

Demands on the environmental resources of land, water, air, or energy would not be significant, as it is already an operational facility.

Impacts to human health and safety would not be significant as access roads would be closed to the public and because the site is on Privately Owned Land. The public is not allowed on the IVC site.

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

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 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 project is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of environmental review pursuant to MEPA.

**Environmental Assessment and Significance Determination Prepared By:**

Emily Hultin  
Air Quality Engineering Scientist

**Environmental Assessment Reviewed By:**

Eric Merchant, Air Permitting Section Supervisor

**Approved By:**

Eric Merchant, Air Permitting Section Supervisor  
Date: December 31, 2024  
Department of Environmental Quality

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## **ABBREVIATIONS and ACRONYMS**

AQB – Air Quality Bureau  
ARM - Administrative Rules of Montana  
BACT – Best Available Control Technology  
BMP - Best Management Practices  
CAA – Clean Air Act of Montana  
CFR - Code of Federal Regulations  
CO - carbon monoxide  
DEQ – Department of Environmental Quality  
DNRC – Department of Natural Resources and Conservation  
EA – Environmental Assessment  
EIS – Environmental Impact Statement  
EPA - U.S. Environmental Protection Agency  
FCAA- Federal Clean Air Act  
IVC- Ingram Veterinary Clinic, PLLC  
MAQP – Montana Air Quality Permit  
MCA – Montana Code Annotated  
MEPA – Montana Environmental Policy Act  
MTNHP - Montana Natural Heritage Program  
NO<sub>x</sub> - oxides of nitrogen  
PM - particulate matter  
PM<sub>10</sub> - particulate matter with an aerodynamic diameter of 10 microns and less  
PM<sub>2.5</sub> - particulate matter with an aerodynamic diameter of 2.5 microns and less  
PPAA - Private Property Assessment Act  
Program - Sage Grouse Habitat Conservation Program  
PSD - Prevention of Significant Deterioration  
SHPO - Montana State Historic Preservation Office  
SOC - Species of Concern  
SO<sub>2</sub> - sulfur dioxide  
tpy – tons per year  
U.S.C. - United States Code  
VOC - volatile organic compound