May 23, 2017

Keith Edgell
Montana Highway Patrol
6727 Laurel Airport Rd.
Billings, MT 59106

Dear Mr. Edgell:

Montana Air Quality Permit #5173-00 is deemed final as of May 23, 2017, by the Department of Environmental Quality (Department). This permit is for an incinerator. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

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

Rhonda Payne
Environmental Science Specialist
Air Quality Bureau
(406) 444-5287

JM:RP
Enclosures

Montana Department of Environmental Quality
Air, Energy, and Mining Division

Montana Air Quality Permit #5173-00

Montana Highway Patrol (MHP)
in conjunction with
Montana Department of Justice – Office of Consumer Protection
MHP Billings Office
6727 Laurel Airport Rd.
Billings, MT 59106

May 23, 2017

MONTANA AIR QUALITY PERMIT

Issued To: Montana Highway Patrol (MHP) in conjunction with Montana Department of Justice – Office of Consumer Protection
MHP Billings Office
6727 Laurel Airport Rd.
Billings, MT 59106

MAQP: #5173-00
Application Complete: 02/21/2017
Preliminary Determination Issued: 03/21/2017
Department's Decision Issued: 05/05/2017
Permit Final: 05/23/2017
Permit ID: 111-0046

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Montana Highway Patrol (MHP), pursuant to Sections 75-2-204, 211 and 215 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

MHP proposes to operate a Firelake Manufacturing Model P16 incinerator in Billings for destruction of unused, unwanted or expired prescription medications turned in at prescription drug take-back boxes at law enforcement locations throughout the state. In addition, the incinerator will be used to destroy illegal substances and evidence/materials as deemed necessary by law enforcement.

B. Plant Location

The MHP Firelake Manufacturing Model P16 incinerator will be located in Billings at 6727 Laurel Airport Road in Yellowstone County, Montana. The legal description of the location is the south ¼ of Section 31, Township 1 South, Range 25 East.

Section II: Conditions and Limitations

A. Emission Limitations

1. MHP shall not cause or authorize to be discharged into the outdoor atmosphere from the incinerator particulate matter in excess of 0.10 grains per dry standard cubic foot adjusted to 12% carbon dioxide(CO_2), dry basis at standard conditions (ARM 17.8.749).

2. MHP shall not cause or authorize emissions discharged into the atmosphere from the incinerator which exhibit an opacity of 10% or greater averaged over six consecutive minutes (ARM 17.8.749).

B. Operational Limitations

1. MHP shall not incinerate any material other than material that is turned in to prescription drug take-back boxes or illegal substances and evidence/materials as deemed necessary by law enforcement. No liquid medication, aerosols, sharps, or chemotherapy drugs are allowed to be incinerated (ARM 17.8.749).

2. MHP shall utilize only propane as fuel for incinerator operations (ARM 17.8.749).

3. The incinerator shall be equipped with auxiliary fuel burners designed to preheat a secondary chamber to 1800 degrees Fahrenheit prior to igniting the primary chamber burner. MHP shall maintain temperatures above 1600 degrees Fahrenheit in the secondary chamber during incineration (ARM 17.8.752).

4. The incineration shall be limited to 8 tons during any twelve (12) month rolling period (ARM 17.8.749).

5. MHP shall develop operation procedures for the incinerator, print those procedures in a incinerator operation procedures manual or have them readily accessible via electronic device, and require all personnel who operate the unit to familiarize themselves with the operating procedures. The operating procedures manual shall be readily available to all personnel who operated the unit. MHP shall keep training records and supply training records and a copy of the operations manual to the Department upon request (ARM 17.8.752).

C. Testing Requirements

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

2. The Department of Environmental Quality (Department) may require further testing (ARM 17.8.105).

D. Operational Reporting Requirements

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

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. 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. MHP shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit,*** change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its

permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to 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).

3. All records compiled in accordance with this permit must be maintained by MHP 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 the Department, and must be submitted to the Department upon request. These records may be stored at a location other than the plant site upon approval by the Department (ARM 17.8.749).

4. MHP shall document, by month, the amount of material incinerated. By the 25th of each month, MHP shall total the monthly amount of material incinerated during the previous twelve (12) months to verify compliance with the limitation in Section II.A.4. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

E. Continuous Monitoring Systems

1. MHP shall install, calibrate, maintain and operate continuous monitoring and recording equipment on the permitted incinerator unit to measure the secondary chamber exit gas temperature (ARM 17.8.749).

2. MHP shall record the daily quantity (mass) of material incinerated and the daily hours of operation of the incinerator (date, start time and end time) (ARM 17.8.749).

F. Notification

1. MHP shall provide the Department with written notification of the commencement of construction of the incinerator within 30 days after commencement of construction (ARM 17.8.749).

2. MHP shall provide the Department with written notification of the actual start-up date of the incinerator within 15 days after the actual start-up date (ARM 17.8.749).

Section III: General Conditions

A. Inspection – MHP shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

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

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

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

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

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

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by MHP 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 (MAQP) Analysis
Montana Highway Patrol
MAQP #5173-00

I. Introduction/Process Description

Montana Highway Patrol (MHP) proposed to install and operate an incinerator for purposes of destroying household pharmaceuticals, located in Billings, MT at 6727 Laurel Airport Road in Yellowstone County, Montana. The legal description of the location is the south ¼ of Section 31, Township 1 South, Range 25 East.

A. Permitted Equipment

Proposed equipment includes a Firelake Manufacturing Model P16 dual-chambered incinerator. The unit is to be fired on propane and has a design rated maximum heat input capacity of 0.8 million British Thermal units per hour (MMBTU/hr), a maximum incineration rate of 90 pounds per hour (lbs/hr), and a charge weight capability of 800 pounds per 10 hour day. The maximum rate of 90 lbs/hr is the design rating of the unit when operated as a crematorium. However, due to the intended use of this unit as a prescription drug incinerator, the permitted annual maximum incineration rate has been limited to 8 tons per year.

B. Source Description

The unit is fired on propane and is capable of incinerating up to 90 lbs/hr of waste. The secondary chamber shall maintain a minimum temperature of 1,600 degrees Fahrenheit (°F), and is equipped with a process controller to monitor temperature and gas flow to the afterburner. After the secondary chamber has been heated sufficiently, the primary chamber burner ignites and the incinerating process is initiated. Initial and supplementary combustion is provided by two burners, one in the primary chamber and one in the secondary chamber, with a combined rated maximum heat input capacity of 0.8 MMBTU/hr.

MHP proposes to use the incinerator for the purposes of destroying (render 'non-retrievable') unwanted (expired or unused) prescription drugs turned in by consumers at drug take-back events. A substance is considered 'non-retrievable' when it cannot be transformed to a physical or chemical condition or state as a controlled substance or controlled substance analogue. Both controlled and non-controlled substances are accepted at these events. Disposal of liquid medications, aerosols, sharps or chemotherapy drugs are not allowed in these boxes and thus not allowed to be incinerated. Additionally, pharmacies and hospitals are not allowed to dispose of expired medication products or medication waste at these locations. Because these substances will not be allowed in these boxes, MAQP 5173-00 includes a permit condition at Section II.B.1 that prevents the source from incinerating anything other than prescription drugs and contraband. MHP is also proposing to incinerate illegal substances and evidence/materials (contraband) as deemed necessary by law enforcement.

MHP proposes to incinerate up to 8 tons per year (tpy) of prescription drugs and/or contraband. This estimate includes approximately 4 tpy generated from the take-back events, an additional 2 tpy from other law enforcement take-back locations and an additional 2 tpy safety factor. The 8 tpy would include any illegal substances or evidence burned in the incinerator as well as the prescription drugs.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for 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 the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

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

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

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

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

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

1. ARM 17.8.204 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_{10}
11. ARM 17.8.230 Fluoride in Forage

MHP 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, MHP 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.

This particular rule does not apply to the incinerator because MHP has applied for and will operate under an MAQP in accordance with ARM 17.8.770 and MCA 75-2-215 for this unit. MHP is required to comply with the emission limitation specified in Section II.B of MAQP #5173-00.

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). Household pharmaceuticals collected at take-back events meet the definition of 'household hazardous waste' and are thus exempt from federal Resource Conservation and Recovery Act which regulates hazardous waste. Household pharmaceuticals are considered part of the municipal solid waste stream. Therefore, the MHP incinerator meets the definition of a municipal solid waste incinerator. NSPS regulations exist for Large Municipal Waste Combustors (> 250 tons/day of municipal solid waste combustion capacity) and Small Municipal Waste Combustors (250 tons/day or less of municipal solid waste combustion capacity). In addition to size, the rules vary depending on when the units were constructed. These regulations are listed below:

   Subpart Ec – Standards of Performance for Hospital, Medical, and Infectious Waste (HMIWI) Incinerators. The term "HMIWI" means any device that combusts any amount of hospital waste and/or medical/infectious waste, as defined in 40 CFR part 62, subpart HHH. This regulation does not apply to the MHP incinerator because the incinerator does not burn hospital, medical and infectious waste.

   Subpart Eb-- Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994. This regulation addresses municipal solid waste incinerators that have the capacity to incinerate 250 tons per day or more of waste. This regulation does not apply to the MHP incinerator because the incinerator does not meet the size capacity in rule.

Subpart AAAA - Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001. This regulation applies to municipal waste combustion unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. This regulation does not apply to the MHP incinerator because the incinerator does not meet the size capacity in rule.

Subpart EEEE – Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006. The MHP incinerator does meet the size and date applicability requirements for this regulation. However, this regulation has an exemption for units that are owned or operated by a government agency such as police, customs, agricultural inspection, or a similar agency to destroy only illegal or prohibited goods such as illegal drugs, or agricultural food products that cannot be transported into the country or across State lines to prevent biocontamination. The MHP incinerator is owned and operated by a government agency to incinerate contraband, thus this regulation does not apply.

Therefore, this facility is not an NSPS affected source because it either does not meet the applicability criteria from relevant NSPS subparts defined in 40 CFR Part 60 or it is exempt from applicable NSPS based on exclusion criteria described in that rule.

9. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This rule incorporates, by reference, the National Emission Standards for Hazardous Air Pollutants (NESHAP). This facility is not a NESHAP affected source because it does not meet any definition of any subpart defined in 40 CFR Part 61.

10. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, the National Emission Standards for Hazardous Air Pollutants for Source Categories. This source is not an affected source because it does not meet any of the source category definitions in any subpart defined in 40 CFR Part 63.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. MHP submitted the appropriate permit application fee for the current permit action.

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

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

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

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

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

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

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

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. MHP 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. MHP submitted an affidavit of publication of public notice for the January 11, 2017 issue of the *Billings Gazette*, a newspaper of general circulation in the City of Billings in Yellowstone County, as proof of compliance with the public notice requirements.

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

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

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

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

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

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

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

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

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

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

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

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

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

This facility is not a major stationary source 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).

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

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

a. PTE > 100 tons/year of any pollutant;

b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. 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 #5173-00 for MHP, 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_{10} nonattainment area.

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

e. This facility is not subject to any current NESHAP.

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

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

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

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

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

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

I. MCA 75-2-215, Solid or Hazardous Waste Incineration-Additional Permit Requirements

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

2. MCA 75-2-215 requires the applicant to provide, to the Department's satisfaction, a characterization an estimate of emissions and ambient concentrations of air pollutants, including hazardous air pollutants, from the incineration of solid waste. The information in the initial permit application fulfilled this requirement.

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

4. MCA 75-2-215 requires the application of pollution control equipment or procedures that meet or exceed BACT. The Department determined that operating the incinerator (crematorium) according to the manufacturer-recommended operation procedures constitutes BACT.

III. BACT Determination

A BACT determination is required for each new or modified source. MHP 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. In addition, MCA 75-2-215 requires a BACT determination for all pollutants resulting from the incinerator operations, not only criteria pollutants.

In a memorandum dated September 26, 2012, the Environmental Protection Agency (EPA) recommends incineration as the preferred method for disposal of household pharmaceuticals collected by take-back events. Incineration reduces the amount of drugs that are disposed of by flushing and landfilling, two methods that have notable environmental concerns. In addition, incineration renders the material non-retrievable (permanently rendered to an unusable state, thus unavailable for abuse, misuse, diversion and accidental ingestion). Incineration meets the non-retrievable destruction standards outlined in the Drug Enforcement Administration (DEA) Secure and Responsible Drug Disposal Act of 2010.

Emissions of products of incomplete combustion from incineration (carbon monoxide (CO), volatile organic compounds (VOC), particulate matter and organic HAPs) resulting from incinerator operations can be controlled by use of a properly designed and operated secondary combustion chamber.

In a secondary combustion chamber, auxiliary burner(s) (often referred to as 'afterburners') are utilized to further combust components vaporized or carried through (entrained) during primary combustion. Proper design includes good turbulence, high temperature and adequate residence time. The destruction efficiency of the components released, formed, or carried through from primary combustion is exponentially increased with increased residence time and temperature in the secondary chamber. Proper operation includes operating the secondary chamber at maximum rated temperatures, and ensuring that the secondary chamber is preheated to the required set-point prior to igniting the primary chamber.

Temperature requirements of the secondary chamber vary depending on the heating value and moisture content of the waste, the amount and types of HAPs and other products of incomplete combustion entering the secondary chamber, and the required emissions performance. The afterburners are usually fired to produce a temperature higher than achieved in the primary combustion chamber. A minimum 1600 °F temperature is recommended to reduce organic HAP emissions, including combustion formed dioxin emissions. Increased temperatures also increase destruction efficiency of other components of incomplete combustion including HAPs, CO, and PM. Quickly cooling the combustion gases after secondary combustion is further found to minimize thermally formed dioxin emissions.

Residence time is achieved by appropriate sizing of the secondary chamber. Such size should provide a residence time long enough to support complete combustion within the secondary combustion chamber given secondary chamber temperatures. Increased secondary chamber size results in increased residence time and increased destruction efficiency, assuming good turbulence. Higher secondary combustion chamber volume, temperature, and turbulence results in increased initial and ongoing operating costs.

Additional control of acid gasses created during incineration can be made by use of a wet scrubber. Acid gases can be expected when burning components which include chlorine, such as plastic. However, based on the limited amount of chlorine expected to be charged, additional wet scrubber control for this case was determined to not be necessary.

Control of heavy metals can be accomplished by use of a fabric filter or wet scrubber. However, based on the limited amount of heavy metals expected to be charged, addition of a fabric filter for heavy metal control was determined to not be necessary.

Combustion related emissions can also be minimized via fuel selection. Propane and natural gas combustion is inherently low in emissions of air pollutants due to characteristics of the fuel. The smaller fuel molecule sizes, lack of fuel bound nitrogen and other impurities, and the inherently low sulfur content of commercially available propane lead to more complete combustion and therefore less emissions of PM, CO, VOC, NO_X, and SO_2 compared to other fuels. Potential PM_{10}, $PM_{2.5}$, NO_x, CO, VOC, and SO_2 emissions from the combustion of propane to operate the incinerator are less than 1 tpy.

Based on these conclusions, the Department determined that proper secondary chamber design, along with the combustion of propane as fuel, and proper operation and maintenance of the incinerator with no additional control constitutes BACT.

IV. Emission Inventory

	ton/yr							
Source	**PM**	**PM10**	**PM2.5**	**NOx**	**VOC**	**CO**	**SO2**	**Lead**
Firelake Manufacturing Model P16 Incinerator	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Fuel Gas Combustion	0.03	0.03	0.03	0.44	0.03	0.25	0.05	0.00
Total	**0.05**	**0.04**	**0.04**	**0.45**	**0.04**	**0.26**	**0.06**	**0.00**

Footnotes:

- Inventory reflects maximum allowable emissions for all pollutants based on maximum production and year-round operation (8,760 hours). The facility did not take limits on production or hours of operation.
- Total PM_{10} emissions are determined by the sum of PM10(fil) + PM(cond)
- Total $PM_{2.5}$ emissions are determined by the sum of PM2.5(fil) + PM(cond)
- Total Particulate Matter emissions are determined by the sum of PM(fil) + PM(cond)

CO = carbon monoxide
(fil) = filterable
HAPs = hazardous air pollutants
hp = horsepower
lb = pound
NO_X = oxides of nitrogen
PM = particulate matter
PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less
SO_2 = sulfur dioxide
VOC = volatile organic compounds
yr = year

Incinerator Criteria Pollutant Emission Inventory

Maximum Capacity: 1.8 lbs/hr 50 kg in 2.5 hours. 50 kg = 110 lbs
Operating Hours: 8760 hrs/yr
Conversion: 1.8 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb = 8.0 tons/yr

PM Emissions

Emission Factor: 4.67 lbs/ton (AP-42 Table 2.3-2, 07/93)
Calculations: 4.67 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb = 0.02 tons/yr

PM10 Emissions

Emission Factor:	3.04	lbs/ton	(AP-42 Table 2.3-15, PM10=65%*PM, 07/93)	
Calculations:	3.0355 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		0.01	tons/yr

PM2.5 Emissions

Emission Factor:	2.022	lbs/ton	(AP-42 Table 2.3-15, PM2.5=43.3%*PM, 07/93)	
Calculations:	2.02211 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		0.01	tons/yr

NOx Emissions

Emission Factor:	3.56	lbs/ton	(AP-42 Table 2.3-1, 07/93)	
Calculations:	3.56 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		0.01	tons/yr

VOC Emissions

Emission Factor:	3.00	lbs/ton	(AFSSCC 5-02-005-05, 03/90)	
Calculations:	3 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		0.01	tons/yr

CO Emissions

Emission Factor:	2.95	lbs/ton	(AP-42 Table 2.3-1, 07/93)	
Calculations:	2.95 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		0.01	tons/yr

SOx Emissions

Emission Factor:	2.17	lbs/ton	(AP-42 Table 2.3-1, 07/93)	
Calculations:	2.17 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		0.01	tons/yr

Lead Emissions

Emission Factor:	0.0728	lbs/ton	(AP-42 Table 2.3-2, 07/93)	
Calculations:	0.0728 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		0.00	tons/yr

Propane-fired external combustion criteria pollutant emissions

Conversions and Assumptions			
1 Btu = 262 cal (unit conversion)	262	cal	
1 kcal = 1000 cal (unit conversion)			
1 MMBtu = 1,000,000 Btu (unit conversion)			
Propane heat content = 91.5 MMBtu/10^3 gal (AP-42, Table 1.5-1, footnote a, 07/08)	91.5		
Propane heating value = 2,522 Btu/ft^3	2522		
Maximum Process Rate = 183,957 kcal/hr (104,326 for upper burner, 79,361 for lower burner)	183957	kcal/hr	(104,326 for upper burner, 79,361 for lower burner)
Maximum Process Rate = 0.70 MMBtu/hr (rate conversion, both burners)	0.702126	MMBtu/hr	(rate conversion, both burners)
Maximum Process Rate = 0.0077 10^3 gal/hr (rate	0.007674	10^3 gal/hr	(rate conversion, both

conversion, both burners)			burners)
Maximum Process Rate = 0.0003 MMscf/hr (rate conversion, both burners)	0.000278	MMscf/hr	(rate conversion, both burners)
Total Max Process Rate = (0.0077 10^3 gal/hr per burner) * (1 burner) = 0.0077 10^3 gal/hr	0.007674	10^3 gal/hr	
Maximum Hours of Operation = 8,760 hrs/yr	8,760	hrs/yr	
Filterable PM Emissions:			
Emission Factor = 0.2 lb/10^3 gal (AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)	0.2	lb/10^3 gal	(AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)
Control Efficiency = 0%	0	%	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) = 0.0067 ton/yr	**0.01**	ton/yr	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) * (1 - 0/100) = 0.00672 ton/yr	**0.01**	ton/yr	
Filterable PM_{10} Emissions:			
Emission Factor = 0.2 lb/10^3 gal (AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)	0.2	lb/10^3 gal	(AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)
Control Efficiency = 0%	0	%	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) = 0.00672 ton/yr	**0.01**	ton/yr	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) * (1 - 0/100) = 0.00672 ton/yr	**0.01**	ton/yr	
Filterable $PM_{2.5}$ Emissions:			
Emission Factor = 0.2 lb/10^3 gal (AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)	0.2	lb/10^3 gal	(AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)
Control Efficiency = 0%	0	%	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) = 0.00672 ton/yr	**0.01**	ton/yr	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) * (1 - 0/100) = 0.00672 ton/yr	**0.01**	ton/yr	
Condensable $PM_{2.5}$ Emissions:			
Emission Factor = 0.5 lb/10^3 gal (AP 42, Table 1.5-1, 7/08)	0.5	lb/10^3 gal	(AP 42, Table 1.5-1, 7/08)
Control Efficiency = 0%	0	%	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.5 lb/10^3 gal) * (ton/2000 lb) = 0.01680 ton/yr	**0.02**	ton/yr	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.5 lb/10^3 gal) * (ton/2000 lb) * (1 - 0/100) = 0.01680 ton/yr	**0.02**	ton/yr	
CO Emissions:			
Emission Factor = 7.5 lb/10^3 gal (AP 42, Table 1.5-1, 7/08)	7.5	lb/10^3 gal	(AP 42, Table 1.5-1, 7/08)
Control Efficiency = 0%	0	%	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (7.5 lb/10^3 gal) * (ton/2000 lb) = 0.25207 ton/yr	**0.25**	ton/yr	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (7.5 lb/10^3 gal) * (ton/2000 lb) * (1 - 0/100) = 0.25207 ton/yr	**0.25**	ton/yr	
NO_x Emissions:			
Emission Factor = 13 lb/10^3 gal (AP 42, Table 1.5-1, 7/08)	13	lb/10^3 gal	(AP 42, Table 1.5-1, 7/08)

Control Efficiency = 0%	0	%	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (13 lb/10^3 gal) * (ton/2000 lb) = 0.43693 ton/yr	**0.44**	ton/yr	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (13 lb/10^3 gal) * (ton/2000 lb) * (1 - 0/100) = 0.43693 ton/yr	**0.44**	ton/yr	

SO_2 Emissions:

Emission Factor = 0.10S lb/10^3 gal (AP 42, Table 1.5-1, S = Sulfur content of fuel in gr/100 ft3, 07/08)	0.10S	lb/10^3 gal	(AP 42, Table 1.5-1, S = Sulfur content of fuel in gr/100 ft3, 07/08)
S = 15 gr/100 ft3 (Assumed for commercial propane)	15	gr/100 ft^3	(Assumed for commercial propane)
Emission Factor = 1.5 lb/10^3 gal	1.5	lb/10^3 gal	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (1.5 lb/10^3 gal) * (ton/2000 lb) = 0.05041 ton/yr	**0.05**	ton/yr	

VOC Emissions:

Emission Factor = 0.8 lb/10^3 gal (AP 42, Table 1.5-1, 07/08, VOC = TOC - CH4)	0.8	lb/10^3 gal	(AP 42, Table 1.5-1, 07/08, VOC = TOC - CH_4)
Control Efficiency = 0%	0	%	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.8 lb/10^3 gal) * (ton/2000 lb) = 0.02689 ton/yr	**0.03**	ton/yr	
Calculation: (0.0077 10^3 gal/hr) * (8760 hrs/yr) * (0.8 lb/10^3 gal) * (ton/2000 lb) * (1 - 0/100) = 0.02689 ton/yr	**0.03**	ton/yr	

Lead Emissions (HAP):

Emission Factor = 0.0005 lbs/MMMscf			(AP42, Table 1.4-2, 7/98)
Calculation:	1.39E-07		
0.0005 lbs/MMscf * 0.000278 MMscf/hr =		lbs/hr	
0.000000139 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	**0.00**	ton/yr	

Incinerator HAP/Metals Emission Inventory: AP-42 Chapter 2.3 Medical Waste Incineration

Lead

Emission Factor:	7.28E-02	lbs/ton	(AP-42, Table 2.3-2, 7/93)	
Calculations:	0.0728 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		2.87E-04	tons/yr

HCl

Emission Factor:	3.35E+01	lbs/ton	(AP-42, Table 2.3-3, 7/93)	
Calculations:	33.5 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		1.32E-01	tons/yr

Total PCBs (polychlorinated biphenyls)

Emission Factor:	4.65E-05	lbs/ton	(AP-42, Table 2.3-3, 7/93)	
Calculations:	0.0000465 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		1.83E-07	tons/yr

Aluminum

Emission Factor:	4.65E-05	lbs/ton	(AP-42, Table 2.3-4, 7/93)	
Calculations:	0.0000465 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		1.83E-07	tons/yr

Antimony

Emission Factor:	1.28E-02	lbs/ton	(AP-42, Table 2.3-4, 7/93)	
Calculations:	0.0128 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		5.05E-05	tons/yr

Arsenic

Emission Factor:	2.42E-04	lbs/ton	(AP-42, Table 2.3-4, 7/93)	
Calculations:	0.000242 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		9.54E-07	tons/yr

Barium

Emission Factor:	3.24E-03	lbs/ton	(AP-42, Table 2.3-5, 7/93)	
Calculations:	0.00324 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		1.28E-05	tons/yr

Beryllium

Emission Factor:	6.25E-06	lbs/ton	(AP-42, Table 2.3-5, 7/93)	
Calculations:	0.00000625 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		2.46E-08	tons/yr

Cadmium

Emission Factor:	5.48E-03	lbs/ton	(AP-42, Table 2.3-5, 7/93)	
Calculations:	0.00548 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		2.16E-05	tons/yr

Chromium

Emission Factor:	7.75E-04	lbs/ton	(AP-42, Table 2.3-6, 7/93)	
Calculations:	0.000775 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		3.06E-06	tons/yr

Copper

Emission Factor:	1.25E-02	lbs/ton	(AP-42, Table 2.3-6, 7/93)	
Calculations:	0.0125 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		4.93E-05	tons/yr

Iron

Emission Factor:	1.44E-02	lbs/ton	(AP-42, Table 2.3-6, 7/93)	
Calculations:	0.0144 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		5.68E-05	tons/yr

Manganese

Emission Factor:	5.67E-04	lbs/ton	(AP-42, Table 2.3-7, 7/93)	
Calculations:	0.000567 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		2.24E-06	tons/yr

Mercury

Emission Factor:	1.07E-01	lbs/ton	(AP-42, Table 2.3-7, 7/93)	
Calculations:	0.107 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		4.22E-04	tons/yr

Nickel

Emission Factor:	5.90E-04	lbs/ton	(AP-42, Table 2.3-7, 7/93)	
Calculations:	0.00059 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		2.33E-06	tons/yr

Silver

Emission Factor:	2.26E-04	lbs/ton	(AP-42, Table 2.3-8, 7/93)	
Calculations:	0.000226 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		8.91E-07	tons/yr

Thallium

Emission Factor:	1.10E-03	lbs/ton	(AP-42, Table 2.3-8, 7/93)	
Calculations:	0.0011 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		4.34E-06	tons/yr

HBr

Emission Factor:	4.33E-02	lbs/ton	(AP-42, Table 2.3-9, 7/93)	
Calculations:	0.0433 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		1.71E-04	tons/yr

Hydrogen Fluoride

Emission Factor:	1.49E-01	lbs/ton	(AP-42, Table 2.3-10, 7/93)	
Calculations:	0.149 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		5.87E-04	tons/yr

Chlorine

Emission Factor:	1.05E-01	lbs/ton	(AP-42, Table 2.3-10, 7/93)	
Calculations:	0.105 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		4.14E-04	tons/yr

2,3,7,8-Tetrachlorodibenzo-p-dioxin

Emission Factor:	5.47E-08	lbs/ton	(AP-42, Table 2.3-11, 7/93)	
Calculations:	0.0000000547 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		2.16E-10	tons/yr

Total CDF (chlorinated dibenzofurans)

Emission Factor:	7.15E-05	lbs/ton	(AP-42, Table 2.3-13, 7/93)	
Calculations:	0.0000715 lbs/ton * 7.884 tons/yr * 0.0005 tons/lb =		2.82E-07	tons/yr

TOTAL HAPS (Incineration)		1.34E-01	tons/y

Propane-fired external combustion HAP Emission Inventory

(Emission factors from AP42 Table 1.4-3 for Natural gas as a proxy for propane HAP emission factors)

Propane-fired combustion		
Hours of Operation	8760	hrs/yr
Max Rated Design Capacity	0.000278	MMscf/hr

2-Methylnaphthalene

	Emission Factor	2.40E-05	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.000024 lbs/MMscf * 0.0003 MMscf/hr =		6.68E-09	lbs/hr
		6.68161098364923E-09 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.93E-08	TPY
3-Methylchloranthrene					
	Emission Factor	1.80E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =		5.01E-10	lbs/hr
		5.01120823773692E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.19E-09	TPY
7,12-Dimethylbenz(a)anthracene					
	Emission Factor	1.60E-05	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.000016 lbs/MMscf * 0.0003 MMscf/hr =		4.45E-09	lbs/hr
		4.45440732243282E-09 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		1.95E-08	TPY
Acenaphthene					
	Emission Factor	1.80E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =		5.01E-10	lbs/hr
		5.01120823773692E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.19E-09	TPY
Acenaphthylene					
	Emission Factor	1.80E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =		5.01E-10	lbs/hr
		5.01120823773692E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.19E-09	TPY
Anthracene					
	Emission Factor	2.40E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0000024 lbs/MMscf * 0.0003 MMscf/hr =		6.68E-10	lbs/hr
		6.68161098364923E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.93E-09	TPY
Benzene					
	Emission Factor	2.10E-03	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0021 lbs/MMscf * 0.0003 MMscf/hr =		5.85E-07	lbs/hr
		5.84640961069308E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.56E-06	TPY
Benz(a)anthracene					
	Emission Factor	1.80E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =		5.01E-10	lbs/hr
		5.01120823773692E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.19E-09	TPY
Benzo(a)pyrene					
	Emission Factor	1.20E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0000012 lbs/MMscf * 0.0003 MMscf/hr =		3.34E-10	lbs/hr
		3.34080549182461E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		1.46E-09	TPY
Benzo(b)fluoranthene					
	Emission Factor	1.80E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	
	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =		5.01E-10	lbs/hr
		5.01120823773692E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.19E-09	TPY
Benzo(k)fluoranthene					
	Emission Factor	1.80E-06	lbs/MMscf	(AP42, Table 1.4-3, 7/98)	

	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =	5.01E-10	lbs/hr
		5.01120823773692E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	2.19E-09	TPY
Benzo(g,h,i)perylene				
	Emission Factor	1.20E-06 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.0000012 lbs/MMscf * 0.0003 MMscf/hr =	3.34E-10	lbs/hr
		3.34080549182461E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	1.46E-09	TPY
Chrysene				
	Emission Factor	1.80E-06 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =	5.01E-10	lbs/hr
		5.01120823773692E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	2.19E-09	TPY
Dibenzo(a,h)anthracene				
	Emission Factor	1.20E-06 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.0000012 lbs/MMscf * 0.0003 MMscf/hr =	3.34E-10	lbs/hr
		3.34080549182461E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	1.46E-09	TPY
Dichlorobenzene				
	Emission Factor	1.20E-03 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.0012 lbs/MMscf * 0.0003 MMscf/hr =	3.34E-07	lbs/hr
		3.34080549182461E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	1.46E-06	TPY
Fluoranthene				
	Emission Factor	3.00E-06 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.000003 lbs/MMscf * 0.0003 MMscf/hr =	8.35E-10	lbs/hr
		8.35201372956154E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	3.66E-09	TPY
Fluorene				
	Emission Factor	2.80E-06 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.0000028 lbs/MMscf * 0.0003 MMscf/hr =	7.80E-10	lbs/hr
		7.79521281425743E-10 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	3.41E-09	TPY
Formaldehyde				
	Emission Factor	7.50E-02 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.075 lbs/MMscf * 0.0003 MMscf/hr =	2.09E-05	lbs/hr
		2.08800343239038E-05 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	9.15E-05	TPY
Hexane				
	Emission Factor	1.80E+00 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	1.8 lbs/MMscf * 0.0003 MMscf/hr =	5.01E-04	lbs/hr
		0.000501120823773692 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	2.19E-03	TPY
Indeno(1,2,3,c,d)pyrene				
	Emission Factor	1.80E-06 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.0000018 lbs/MMscf * 0.0003 MMscf/hr =	5.01E-10	lbs/hr
			2.19E-09	TPY
Naphthalene				
	Emission Factor	6.10E-04 lbs/MMscf (AP42, Table 1.4-3, 7/98)		

	Calculations	0.00061 lbs/MMscf * 0.0003 MMscf/hr =	1.70E-07	lbs/hr
		1.69824279167751E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	7.44E-07	TPY
Phenanthrene				
	Emission Factor	1.70E-05 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.000017 lbs/MMscf * 0.0003 MMscf/hr =	4.73E-09	lbs/hr
		4.73280778008487E-09 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	2.07E-08	TPY
Pyrene				
	Emission Factor	5.00E-06 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.000005 lbs/MMscf * 0.0003 MMscf/hr =	1.39E-09	lbs/hr
		1.39200228826026E-09 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	6.10E-09	TPY
Toluene				
	Emission Factor	3.40E-03 lbs/MMscf (AP42, Table 1.4-3, 7/98)		
	Calculations	0.0034 lbs/MMscf * 0.0003 MMscf/hr =	9.47E-07	lbs/hr
		9.46561556016974E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	4.15E-06	TPY
Arsenic				
	Emission Factor	2.00E-04 lbs/MMscf (AP42, Table 1.4-4, 7/98)		
	Calculations	0.0002 lbs/MMscf * 0.0003 MMscf/hr =	5.57E-08	lbs/hr
		5.56800915304103E-08 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	2.44E-07	TPY
Beryllium				
	Emission Factor	1.20E-05 lbs/MMscf (AP42, Table 1.4-4, 7/98)		
	Calculations	0.000012 lbs/MMscf * 0.0003 MMscf/hr =	3.34E-09	lbs/hr
		3.34080549182461E-09 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	1.46E-08	TPY
Cadmium				
	Emission Factor	1.10E-03 lbs/MMscf (AP42, Table 1.4-4, 7/98)		
	Calculations	0.0011 lbs/MMscf * 0.0003 MMscf/hr =	3.06E-07	lbs/hr
		3.06240503417256E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	1.34E-06	TPY
Chromium, total				
	Emission Factor	1.40E-03 lbs/MMscf (AP42, Table 1.4-4, 7/98)		
	Calculations	0.0014 lbs/MMscf * 0.0003 MMscf/hr =	3.90E-07	lbs/hr
		3.89760640712872E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	1.71E-06	TPY
Cobalt				
	Emission Factor	8.40E-05 lbs/MMscf (AP42, Table 1.4-4, 7/98)		
	Calculations	0.000084 lbs/MMscf * 0.0003 MMscf/hr =	2.34E-08	lbs/hr
		2.33856384427723E-08 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	1.02E-07	TPY
Lead				
	Emission Factor	5.00E-04 lbs/MMscf (AP42, Table 1.4-2, 7/98)		
	Calculations	0.0005 lbs/MMscf * 0.0003 MMscf/hr =	1.39E-07	lbs/hr
		1.39200228826026E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =	6.10E-07	TPY
Manganese				
	Emission Factor	3.80E-04 lbs/MMscf (AP42, Table 1.4-4, 7/98)		
	Calculations	0.00038 lbs/MMscf * 0.0003 MMscf/hr =	1.06E-07	lbs/hr

	1.05792173907779E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		4.63E-07	TPY
Mercury				
Emission Factor	2.60E-04 lbs/MMscf (AP42, Table 1.4-4, 7/98)			
Calculations	0.00026 lbs/MMscf * 0.0003 MMscf/hr =		7.24E-08	lbs/hr
	7.23841189895333E-08 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		3.17E-07	TPY
Nickel				
Emission Factor	2.10E-03 lbs/MMscf (AP42, Table 1.4-4, 7/98)			
Calculations	0.0021 lbs/MMscf * 0.0003 MMscf/hr =		5.85E-07	lbs/hr
	5.84640961069308E-07 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.56E-06	TPY
Selenium				
Emission Factor	2.40E-05 lbs/MMscf (AP42, Table 1.4-4, 7/98)			
Calculations	0.000024 lbs/MMscf * 0.0003 MMscf/hr =		6.68E-09	lbs/hr
	6.68161098364923E-09 lbs/hr * 8760 hrs/yr * 0.0005 tons/lb =		2.93E-08	TPY

HAP Emission Rates – Waste Incineration

HAP	**EF**[1] (lb/ton)	**X** ton/hr	**=** lb/hr	**X** (g/lb)	**/** (hr/sec)	**=** (g/s)	% of Total
Lead	7.28E-02	9.13E-04	6.65E-05	453.6	3600	8.38E-06	0.2143%
HCl	3.35E+01	9.13E-04	3.06E-02	453.6	3600	3.85E-03	98.598%
Total PCBs (polychlorinated biphenyls)	4.65E-05	9.13E-04	4.25E-08	453.6	3600	5.35E-09	0.0001%
Antimony	1.28E-02	9.13E-04	1.17E-05	453.6	3600	1.47E-06	0.0377%
Arsenic	2.42E-04	9.13E-04	2.21E-07	453.6	3600	2.78E-08	0.0007%
Beryllium	6.25E-06	9.13E-04	5.71E-09	453.6	3600	7.19E-10	0.0000%
Cadmium	5.48E-03	9.13E-04	5.00E-06	453.6	3600	6.31E-07	0.0161%
Chromium	7.75E-04	9.13E-04	7.08E-07	453.6	3600	8.92E-08	0.0023%
Manganese	5.67E-04	9.13E-04	5.18E-07	453.6	3600	6.52E-08	0.0017%
Mercury	1.07E-01	9.13E-04	9.77E-05	453.6	3600	1.23E-05	0.3149%
Nickel	5.90E-04	9.13E-04	5.39E-07	453.6	3600	6.79E-08	0.0017%
Hydrogen Fluoride	1.49E-01	9.13E-04	1.36E-04	453.6	3600	1.71E-05	0.4385%
Chlorine	1.05E-01	9.13E-04	9.59E-05	453.6	3600	1.21E-05	0.3090%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	5.47E-08	9.13E-04	5.00E-11	453.6	3600	6.29E-12	0.0000%
Total CDF (chlorinated dibenzofurans)	7.15E-05	9.13E-04	6.53E-08	453.6	3600	8.23E-09	0.0002%
**Total HAP Concentration ----------> **			**0.031009**			**0.003907**	**1**

HAP Emission Rates – Fuel Combustion

2-Methylnaphthalene	2.40E-05	2.78E-04	6.68E-09	453.6	3600	8.42E-10	0.001%
3-Methylchloranthrene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
7,12-Dimethylbenz(a)anthracene	1.60E-05	2.78E-04	4.45E-09	453.6	3600	5.61E-10	0.001%
Acenaphthene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
Acenaphthylene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
Anthracene	2.40E-06	2.78E-04	6.68E-10	453.6	3600	8.42E-11	0.000%

Benzene	2.10E-03	2.78E-04	5.85E-07	453.6	3600	7.37E-08	0.111%
Benz(a)anthracene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
Benzo(a)pyrene	1.20E-06	2.78E-04	3.34E-10	453.6	3600	4.21E-11	0.000%
Benzo(b)fluoranthene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
Benzo(k)fluoranthene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
Benzo(g,h,i)perylene	1.20E-06	2.78E-04	3.34E-10	453.6	3600	4.21E-11	0.000%
Chrysene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
Dibenzo(a,h)anthracene	1.20E-06	2.78E-04	3.34E-10	453.6	3600	4.21E-11	0.000%
Dichlorobenzene	1.20E-03	2.78E-04	3.34E-07	453.6	3600	4.21E-08	0.064%
Fluoranthene	3.00E-06	2.78E-04	8.35E-10	453.6	3600	1.05E-10	0.000%
Fluorene	2.80E-06	2.78E-04	7.80E-10	453.6	3600	9.82E-11	0.000%
Formaldehyde	7.50E-02	2.78E-04	2.09E-05	453.6	3600	2.63E-06	3.971%
Hexane	1.80E+00	2.78E-04	5.01E-04	453.6	3600	6.31E-05	95.316%
Indeno(1,2,3,c,d)pyrene	1.80E-06	2.78E-04	5.01E-10	453.6	3600	6.31E-11	0.000%
Naphthalene	6.10E-04	2.78E-04	1.70E-07	453.6	3600	2.14E-08	0.032%
Phenanthrene	1.70E-05	2.78E-04	4.73E-09	453.6	3600	5.96E-10	0.001%
Pyrene	5.00E-06	2.78E-04	1.39E-09	453.6	3600	1.75E-10	0.000%
Toluene	3.40E-03	2.78E-04	9.47E-07	453.6	3600	1.19E-07	0.180%
Arsenic	2.00E-04	2.78E-04	5.57E-08	453.6	3600	7.02E-09	0.011%
Beryllium	1.20E-05	2.78E-04	3.34E-09	453.6	3600	4.21E-10	0.001%
Cadmium	1.10E-03	2.78E-04	3.06E-07	453.6	3600	3.86E-08	0.058%
Chromium, total	1.40E-03	2.78E-04	3.90E-07	453.6	3600	4.91E-08	0.074%
Cobalt	8.40E-05	2.78E-04	2.34E-08	453.6	3600	2.95E-09	0.004%
Lead	5.00E-04	2.78E-04	1.39E-07	453.6	3600	1.75E-08	0.026%
Manganese	3.80E-04	2.78E-04	1.06E-07	453.6	3600	1.33E-08	0.020%
Mercury	2.60E-04	2.78E-04	7.24E-08	453.6	3600	9.12E-09	0.014%
Nickel	2.10E-03	2.78E-04	5.85E-07	453.6	3600	7.37E-08	0.111%
Selenium	2.40E-05	2.78E-04	6.68E-09	453.6	3600	8.42E-10	0.001%
**Total HAP Concentration ----------> **			**0.000525**			**6.62E-05**	100%

V. Existing Air Quality

The MHP incinerator will be located at 6727 Laurel Airport Road in Yellowstone County, Montana. The legal description of the locations is the south ¼ of Section 31, Township 1 South, Range 25 East. The immediate area in which the proposed incinerator is planned is designated attainment/unclassifiable for all National Ambient Air Quality Standards (NAAQS). However, nearby there is one nonattainment area and two areas with a designated maintenance plan. The Laurel SO2 Nonattainment Area is located 4 miles from the proposed location of the incinerator; the Billings CO Limited Maintenance Area is 6 miles; and the Billings SO2 Maintenance Area is 10 miles away.

The screening analysis performed during the MAQP process demonstrated that the facility poses a negligible risk to human health as required for permit issuance for an incinerator. Additionally MAQP #5173-00 contains operating and monitoring requirements to ensure that proper operation of the facility would minimize potential air emissions.

VI. Ambient Air Impact Analysis

Potential emissions from the proposed facility are significantly less than the Department's regulatory permitting threshold; therefore a comprehensive impact analysis is not required to

ensure associated emissions do not negatively affect or impede conformance to the Nonattainment or Maintenance Area compliance plans. MHP applied for this MAQP in accordance with ARM 17.8.770 and MCA 75-2-215 for this unit.

The Department conducted SCREEN3 Modeling, an EPA-approved screening model, using the indicated inputs obtained from the emission inventory and a HAP emission rate of 0.00397 grams per second (g/s), which is the sum of all toxic pollutant and/or HAP emissions from the proposed incinerator. The maximum 1-hour modeled concentration was then converted to an annual average and used in the risk assessment. The individual one-hour results for each pollutant were calculated by multiplying the maximum modeled annual concentration of toxic and/or HAP's in micrograms per cubic meter ($\mu g/m^3$), by the percentage of each individual pollutant identified within the emission inventory. The emission factors employed in development of the emission inventory were derived from stack test data; as such include pollutant contributions of fuel utilized in firing the incinerator.

As shown by the Health Risk Assessment of the following Section VII, the Department determined that there is a negligible human health risk associated with the proposed project. With consideration of the modeling accomplished for the Health Risk Assessment, and the small potential to emit of criteria pollutants, the Department determined that the impacts from this permitting action will be minor. Further, the proposed action will not cause or contribute to a violation of any ambient air quality standard

Speciated HAP Concentrations

HAP	Annual Maximum Concentration	X	% of Total =	Speciated HAP Concentration		SubCh. 7 de minimis levels: Cancer Annual	Noncancer Chronic Annual	Noncancer Acute Annual
Lead	0.0924	µg/m3	0.2143%	1.98E-04	µg/m3	--	1.50E-02	
HCl	0.0924	µg/m3	98.5987%	9.12E-02	µg/m3	--	2.00E-01	30
Total PCBs (polychlorinated biphenyls)	0.0924	µg/m3	0.0001%	1.27E-07	µg/m3	7.14E-05	1.20E-02	--
Antimony	0.0924	µg/m3	0.0377%	3.48E-05	µg/m3	--	2.00E-03	--
Arsenic	0.0924	µg/m3	0.0007%	6.59E-07	µg/m3	--	5.00E-03	--
Beryllium	0.0924	µg/m3	0.0000%	1.70E-08	µg/m3	--	4.80E-05	--
Cadmium	0.0924	µg/m3	0.0161%	1.49E-05	µg/m3	--	3.50E-02	--
Chromium	0.0924	µg/m3	0.0023%	2.11E-06	µg/m3	--	2.00E-05	--
Manganese	0.0924	µg/m3	0.0017%	1.54E-06	µg/m3	--	5.00E-04	--
Mercury	0.0924	µg/m3	0.3149%	2.91E-04	µg/m3	--	3.00E-03	0.3
Nickel	0.0924	µg/m3	0.0017%	1.61E-06	µg/m3	--	2.40E-03	0.01
Hydrogen Fluoride	0.0924	µg/m3	0.4385%	4.05E-04	µg/m3	--	5.90E-02	5.8
Chlorine	0.0924	µg/m3	0.3090%	2.86E-04	µg/m3	--	7.10E-01	0.23
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.0924	µg/m3	0.0000%	1.49E-10	µg/m3	2.63E-09	3.50E-08	--
Total CDF (chlorinated dibenzofurans)	0.0924	µg/m3	0.0002%	1.95E-07	µg/m3	--	--	--
2-Methylnaphthalene	0.001956	µg/m3	0.001%	2.486E-08	µg/m3	--	--	--
3-Methylchloranthrene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	--	--	--
7,12-Dimethylbenz(a)anthracene	0.001956	µg/m3	0.001%	1.657E-08	µg/m3	--	--	--

Acenaphthene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	--	--	--
Acenaphthylene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	--	--	--
Anthracene	0.001956	µg/m3	0.000%	2.486E-09	µg/m3	--	--	--
Benzene	0.001956	µg/m3	0.111%	2.175E-06	µg/m3	1.20E-02	7.10E-01	--
Benz(a)anthracene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	5.88E-05	--	--
Benzo(a)pyrene	0.001956	µg/m3	0.000%	1.243E-09	µg/m3	5.88E-05	--	--
Benzo(b)fluoranthene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	5.88E-05	--	--
Benzo(k)fluoranthene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	5.88E-05	--	--
Benzo(g,h,i)perylene	0.001956	µg/m3	0.000%	1.243E-09	µg/m3	--	--	--
Chrysene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	--	--	--
Dibenzo(a,h)anthracene	0.001956	µg/m3	0.000%	1.243E-09	µg/m3	5.88E-05	--	--
Dichlorobenzene	0.001956	µg/m3	0.064%	1.243E-06	µg/m3	9.09E-03	8.00E+00	--
Fluoranthene	0.001956	µg/m3	0.000%	3.107E-09	µg/m3	--	--	--
Fluorene	0.001956	µg/m3	0.000%	2.9E-09	µg/m3	--	--	--
Formaldehyde	0.001956	µg/m3	3.971%	7.768E-05	µg/m3	7.69E-03	3.60E-02	3.70E+00
Hexane	0.001956	µg/m3	95.316%	0.0018644	µg/m3	--	2.00E+00	--
Indeno(1,2,3,c,d)pyrene	0.001956	µg/m3	0.000%	1.864E-09	µg/m3	5.88E-05	--	--
Naphthalene	0.001956	µg/m3	0.032%	6.318E-07	µg/m3	--	1.40E-01	--
Phenanthrene	0.001956	µg/m3	0.001%	1.761E-08	µg/m3	--	--	--
Pyrene	0.001956	µg/m3	0.000%	5.179E-09	µg/m3	--	--	--
Toluene	0.001956	µg/m3	0.180%	3.522E-06	µg/m3	--	4.00E+00	--
Arsenic	0.001956	µg/m3	0.011%	2.072E-07	µg/m3	2.33E-05	5.00E-03	--
Beryllium	0.001956	µg/m3	0.001%	1.243E-08	µg/m3	4.17E-05	4.80E-05	--
Cadmium	0.001956	µg/m3	0.058%	1.139E-06	µg/m3	5.56E-05	3.50E-02	--
Chromium, total	0.001956	µg/m3	0.074%	1.45E-06	µg/m3	8.33E-06	2.00E-05	--
Cobalt	0.001956	µg/m3	0.004%	8.7E-08	µg/m3	--	--	--
Lead	0.001956	µg/m3	0.026%	5.179E-07	µg/m3	--	1.50E-02	--
Manganese	0.001956	µg/m3	0.020%	3.936E-07	µg/m3	--	5.00E-04	--
Mercury	0.001956	µg/m3	0.014%	2.693E-07	µg/m3	--	3.00E-03	3.00E-01
Nickel	0.001956	µg/m3	0.111%	2.175E-06	µg/m3	3.85E-04	2.40E-03	1.00E-02
Selenium	0.001956	µg/m3	0.001%	2.486E-08	µg/m3	--	5.00E-03	2.00E-02

Although not all pollutants exceeded the levels specified in Table 1 or Table 2 of ARM 17.8.770, the Department conducted a full risk assessment. The Department included those pollutants for which emissions factors are available for incinerator operations and fuel combustion. For those pollutants reviewed, the calculated cancer risks demonstrate there is not more than a negligible health, safety, and welfare risk to the public and to the environment, as defined in ARM 17.8.740(16). The risk assessment is provided below:

HAP	Modeled HAP Concentration		Cancer URF[(2)] $(\mu g/m^3)^{-1}$	Cancer Risk[(3)]	CNCREL[(6)] $\mu g/m^3$	CNCREL Quotient[(7)]
Lead	1.98E-04	µg/m3	ND	ND	1.50E-01	1.32E-03
HCl	9.12E-02	µg/m3	ND	ND	2.00E+01	4.56E-03

HAP	Modeled HAP Concentration		Cancer URF[2] $(\mu g/m^3)^{-1}$	Cancer Risk[3]	CNCREL[6] $\mu g/m^3$	CNCREL Quotient[7]
Total PCBs (polychlorinated biphenyls)	1.27E-07	µg/m3	1.00E-04	1.27E-11	ND	NA
Antimony	3.48E-05	µg/m3	ND	ND	ND	NA
Arsenic	6.59E-07	µg/m3	4.30E-03	2.83E-09	1.50E-02	4.39E-05
Beryllium	1.70E-08	µg/m3	2.40E-03	4.08E-11	2.00E-02	8.50E-07
Cadmium	1.49E-05	µg/m3	1.80E-03	2.68E-08	1.00E-02	1.49E-03
Chromium	2.11E-06	µg/m3	1.20E-02	2.53E-08	1.00E-01	2.11E-05
Manganese	1.54E-06	µg/m3	ND	ND	5.00E-02	3.09E-05
Mercury	2.91E-04	µg/m3	ND	ND	3.00E-01	9.71E-04
Nickel	1.61E-06	µg/m3	ND	ND	9.00E-02	1.78E-05
Hydrogen Fluoride	4.05E-04	µg/m3	ND	ND	1.40E+01	2.90E-05
Chlorine	2.86E-04	µg/m3	ND	ND	1.50E-01	1.90E-03
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1.49E-10	µg/m3	3.30E+01	4.91E-09	4.00E-05	3.72E-06
Total CDF (chlorinated dibenzofurans)	1.95E-07	µg/m3	ND	ND	ND	NA
2-Methylnaphthalene	1.47E-06	µg/m3	ND	ND	ND	ND
3-Methylchloranthrene	1.11E-07	µg/m3	6.30E-03	6.97E-10	ND	ND
7,12-Dimethylbenz(a)anthracene	9.83E-07	µg/m3	7.10E-02	6.98E-08	ND	ND
Acenaphthene	1.11E-07	µg/m3	ND	ND	ND	ND
Acenaphthylene	1.11E-07	µg/m3	ND	ND	ND	ND
Anthracene	1.47E-07	µg/m3	ND	ND	ND	ND
Benzene	1.29E-04	µg/m3	1.10E-04	1.01E-09	3.00E+01	4.30E-06
Benzo(a)anthracene	1.11E-07	µg/m3	1.10E-03	1.22E-11	ND	ND
Benzo(a)pyrene	7.37E-08	µg/m3	1.10E-04	8.11E-11	ND	ND
Benzo(b)fluoranthene	1.11E-07	µg/m3	1.10E-04	1.22E-11	ND	ND
Benzo(k)fluoranthene	1.11E-07	µg/m3	ND	1.22E-11	ND	ND
Benzo(g,h,i)perylene	7.37E-08	µg/m3	1.10E-05	ND	ND	ND
Chrysene	1.11E-07	µg/m3	1.20E-03	1.22E-12	ND	ND
Dibenz(a,h)anthracene	7.37E-08	µg/m3	1.10E-05	8.85E-11	ND	ND
1,4-Dichlorobenzene(p)	7.37E-05	µg/m3	1.10E-04	8.11E-10	8.00E+02	9.22E-08
Fluoranthene	1.84E-07	µg/m3	ND	ND	ND	ND
Fluorene	1.72E-07	µg/m3	ND	ND	ND	ND
Formaldehyde	4.61E-03	µg/m3	5.50E-09	2.53E-11	9.80E+00	4.70E-04
Hexane	1.11E-01	µg/m3	ND	ND	7.00E+02	1.58E-04
Indeno(1,2,3,c,d)pyrene	1.11E-07	µg/m3	0.00011	1.22E-11	ND	ND
Naphthalene	3.75E-05	µg/m3	0.000034	ND	3	6.64 E-06
Phenanthrene	1.04E-06	µg/m3	ND	ND	ND	ND
Pyrene	3.07E-07	µg/m3	ND	ND	ND	ND
Toluene	2.09E-04	µg/m3	ND	ND	5.00E+03	4.18E-08
Arsenic	1.23E-05	µg/m3	4.30E-03	5.28E-08	3.00E-02	4.10E-04
Beryllium	7.37E-07	µg/m3	2.40E-03	1.77E-09	2.00E-02	3.69E-05

HAP	Modeled HAP Concentration		Cancer URF[2] $(\mu g/m^3)^{-1}$	Cancer Risk[3]	CNCREL[6] $\mu g/m^3$	CNCREL Quotient[7]
Cadmium	6.76E-05	µg/m3	1.80E-03	1.22E-07	2.00E-02	3.38E-03
Chromium, total	8.61E-06	µg/m3	1.20E-02	1.03E-07	1.08E-01	7.97E-05
Cobalt	5.16E-06	µg/m3	ND	ND	1.00E-04	5.16E-02
Lead	3.07E-05	µg/m3	ND	ND	1.50E+00	2.05E-05
Manganese	2.34E-05	µg/m3	ND	ND	5.00E-02	4.67E-04
Mercury	1.60E-05	µg/m3	ND	ND	3.00E-01	5.33E-05
Nickel	1.29E-04	µg/m3	ND	ND	9.00E-02	1.43E-03
Selenium	1.48E-06	µg/m3	ND	ND	2.00E+01	7.38E-08
TOTAL RISK				**4.12E-07**		**6.85E-02**

(1) Source of chronic dose-response values is from Table 1: Prioritized Chronic Dose-Response Values for Screening Risk Assessments (4/27/10), from www.epa.gov/ttn/atw/toxsource/table1.pdf.

(2) Cancer Chronic Inhalation Unit Risk Factor, units $1/\mu g/m^3$

(3) Cancer Risk is unitless and is calculated by multiplying the predicted concentration by the URF.

(4) AKA Propylene dichloride

(5) AKA Tetrachloroethene, perchloroethylene.

(6) Chronic Noncancer Reference Exposure Level

(7) CNCREL Quotient Value is calculated by dividing the modeled HAP concentration by the CNCREL.

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

VII. Taking or Damaging Implication Analysis

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

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

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

VIII. Environmental Assessment

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

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

ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Montana Highway Patrol (MHP) in conjunction with Montana Department of Justice – Office of Consumer Protection

Montana Air Quality Permit number (MAQP): 5173-00

EA Draft: 3/21/2017
EA Final: 5/5/2017
Permit Final: 5/23/2017

1. Legal Description of Site: The legal description for the location of the incinerator is the south ¼ of Section 31, Township 1 South, Range 25 East. The immediate area surrounding the incinerator siting is rural/industrial. Fisher Sand and Gravel is the adjacent property to the west and the Kindsfater Wetland is located to the southwest. The Yellowstone River is approximately 2 miles to the south of the proposed incinerator location.

2. Description of Project: MHP is proposing to operate a Firelake Manufacturing Model P16 dual-chambered incinerator. The unit is to be fired on propane and has a design rated maximum heat input capacity of 0.8 million British Thermal units per hour (mmBTU/hr) and a maximum incineratrion rate of 90 pounds per hour (lbs/hr) and a charge weight capability of 800 pounds per 10 hour day.

3. Objectives of Project: MHP would be using the incinerator to destroy (render "non-retrievable") material that is tuned in to prescription drug take-back boxes at law enforcement locations throughout the state. Both uncontrolled and controlled substances are accepted at these events. A substance is considered 'non-retrievable' when it cannot be transformed to a physical or chemical condition or state as a controlled substance or controlled substance analogue. MHP would also incinerate illegal substances and evidence/material as deemed necessary by law enforcement.

4. Alternatives Considered: In addition to the proposed action, the Department also considered the "no-action" alternative. The no-action alternative would mean that the prescription drugs and evidence would have to be transported and destroyed at another location capable of handling the material. Currently, the U.S. Drug Enforcement Agency (DEA) is transporting and destroying the material in their incinerator located in Salt Lake City, UT. One main purpose of permitting the MHP incinerator is to save money incurred as a result of transporting to incinerators out of state. Therefore, the "no-action" alternative was eliminated from further consideration. Other alternatives considered were discussed in the BACT analysis, Section III, in the permit.

5. A Listing of Mitigation, Stipulations, and Other Controls: A list of enforceable conditions, including a BACT analysis, would be included in MAQP #5173-00.

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

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

A. Terrestrial and Aquatic Life and Habitats

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

Further, the proposed incinerator would operate within an existing building located on a property where land use is industrial. No additional construction or ground disturbance to the area would be required. Overall, any impact to the terrestrial and aquatic life and habitats of the proposed project area would be expected to be minor.

B. Water Quality, Quantity and Distribution

The project would not be expected to affect water quantity or distribution in the project area. The incinerator operates within a building and does not discharge or use water during operation. Additionally, the prevailing winds would blow the effluent away from the surface water nearby which would limit the deposition of pollutants that may affect the Kidsfater Wetland and nearby Yellowstone River.

Emissions from the project may potentially affect water quality in the project area due to air pollutant deposition. However, any emissions and resulting deposition impacts from the project would likely be very minor due to the low concentration of those pollutants emitted.

C. Geology and Soil Quality, Stability and Moisture

The project would not be expected to affect the geology, stability, and moisture of the project area. The incinerator operates within a building located in an area zoned as commercial and a limited amount of construction or ground disturbance to the area is required.

Proper incinerator operation would result in minor air pollution emissions to the ambient environment. These pollutants would deposit on the soils in the surrounding area. However, any impact from deposition of these pollutants would likely be very minor due to dispersion characteristics and the low concentration of those pollutants emitted.

D. Vegetation Cover, Quantity, and Quality

Air emissions from the project may potentially affect vegetation cover, quantity, and quality in the project area. However, any emissions and resulting impacts from the project would be expected to be minor due to the dispersion characteristics and the low concentration of those pollutants emitted.

Further, the incinerator would operate in an existing building located in an industrial area and a limited amount of construction or ground disturbance is required. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would likely be minor.

E. Aesthetics

The incinerator would operate within an already existing building and a limited amount of construction or site disturbance is required. The project would not change the aesthetic nature of the area. Further, visible emissions from the source would be limited to 10% opacity. Therefore, the project would expect to result in only a minor impact to aesthetics of the area.

F. Air Quality

The project would result in the emissions of various criteria pollutants and HAPs to the ambient air in the project area. However, it has been demonstrated by air dispersion modeling that any air quality impacts due to HAPs from the project would be minor and would constitute negligible risk to human health and the environment. Maximum potential emissions of criteria pollutants are very low by industrial standards and not expected to cause or contribute to any violation of an ambient air standard.

The Department conducted air dispersion modeling to determine the ambient air quality impacts from HAPs that would be generated by the incinerator. The SCREEN3 model was selected for the air dispersion modeling. The full meteorology option was selected to provide a conservative result. Receptors were placed from 1 to 1,000 meters in a simple terrain array. The simple terrain option was chosen because it was the more conservative option.

Stack parameters and emission rates used in the SCREEN3 model are contained in Section V of the permit analysis and are on file with the Department. Stack velocity and gas temperature were taken from data provided by the manufacturer of the incinerator. Due to the dispersion characteristics and low levels of pollutants that would be emitted from the proposed project the Department determined that any impacts to air quality would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The current permit action would result in negligible impacts to any existing unique endangered, fragile, or limited environmental resource in the proposed area of operation. The proposed incinerator would require only a limited amount of construction inside an already existing building and would operate within a building located in an industrial area, thereby limiting the potential for impact to any unique endangered, fragile, or limited environmental resource in the proposed location.

The Department, in an effort to assess any potential impacts to any unique endangered, fragile, or limited environmental resources in the initial proposed area of operations, contacted the Montana Natural Heritage Program (MNHP) to identify any species of concern associated with the proposed site location. Search results concluded there are 18 species of special concern within the defined area; the Spotted Bat, the American White Pelican, the Bald Eagle, the Black-necked Stilt, the Ferruginous Hawk, the Golden Eagle, the Great Blue Heron, the Peregrine Falcon, the Pinyon Jay, the Sharp-tailed Grouse, the White-faced ibis, the Yellow-billed Cuckoo, the Poains Hog-nosed Snake, the Spiny Softshell, the Western Milksnake, the Northern Leopard Frog, the Sauger and the Bat Roost.

The identified species of concern are peripatetic in nature and not likely associated with the immediate location of the proposed project, as the site and surroundings is an industrial area that is zoned as commercial. Further, as detailed in Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted. Overall, any impact to this unique endangered, fragile, or limited environmental resource of the proposed project area would expect to be negligible.

H. Sage Grouse Executive Order

The Department recognizes that the site location is not within a Greater Sage Grouse Habitat Area as defined by Executive Order No. 12-2015.

I. Demands on Environmental Resource of Water, Air and Energy

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

J. Historical and Archaeological Sites

The Department contacted the Montana Historical Society - State Historical Preservation Office (SHPO) in an effort to identify any historical and/or archaeological sites that may be present in the proposed area of construction/operation. According to SHPO records there have been a few previously recorded sites within the designated search locales. In addition to the sites there have been a few previously conducted cultural resource inventories done in the areas. According to correspondence from SHPO, there is a low likelihood cultural properties will be impacted. Therefore, a recommendation for a cultural resource inventory is unwarranted at this time. However, should cultural materials be inadvertently discovered during this project, the SHPO office must be contacted and the site investigated.

K. Cumulative and Secondary Impacts

The cumulative and secondary impacts from this project on the environment in the immediate are expected to be minor. This facility is within an industrial area and the air pollution emissions from this facility are negligible. The Department believes that this facility would be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #5173-00.

8. SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

MHP is proposing to operate a 90 lb/hr propane-fired incinerator for destroying prescription drugs and illegal substances. The incinerator's emissions would be extremely low on an industrial scale and MAQP 5173-00 would require 10% or less opacity while operating. Any changes to social structures or mores would be expected to be minor.

B. Cultural Uniqueness and Diversity

The proposed project would not cause any change in the cultural uniqueness and diversity of the area as the incinerator will be constructed and installed in a small metal sided enclosure to match current building color.

C. Local and State Tax Base and Tax Revenue

The proposed project would not provide additional revenue for MHP because the purpose of the project is for public safety, not business. No impact to local and state tax base and tax revenue would occur as the project would not require any additional employees.

D. Agricultural or Industrial Production

No effects to agricultural or industrial production would occur as a result of the project. The proposed project is to destroy prescription drugs and illegal substances through incineration.

E. Human Health

As described in Section VI of the MAQP Analysis, modeling and analysis of hazardous air pollutants showed negligible risk to human health. Furthermore, the maximum potential to emit of conventional air pollutants would be very small by industrial standards. Impacts to human health would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project is to incinerate prescription drugs and illegal substances. The area is restricted to authorized persons only, therefore access to recreational activities or wilderness areas in the proposed project area would not exist. The incinerator

would be located within a small metal enclosure. Permit conditions would require opacity of the emissions to be 10% or less while operating. The potential to emit of the proposed incinerator would be very small. Therefore, minor, if any impact to the quality of recreational and wilderness activities would be expected as a result of this project.

G. Quantity and Distribution of Employment

The proposed project would not require any new employees for the operation of the incinerator. Any impact to the quantity and distribution of employment would not be expected.

H. Distribution of Population

Currently, 19 employees work out of the location and the proposed project would not require any new employees in the operation of the incinerator, therefore, no impact to the distribution of population would be expected.

I. Demands for Government Services

Government permitting services provided by Yellowstone County would be required for the permitting of the electrical installation and construction of the incinerator. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Overall, demands for government services would be minor.

J. Industrial and Commercial Activity

The proposed project would result in only a minor impact on local industrial and commercial activity because the incinerator would require only a limited amount of new construction, would operate within a building and would not result in additional industrial production. Overall, any impacts to industrial and commercial activity in the proposed area of operation would likely be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals this project may impact. The state standards would be protective of the proposed project area.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would be expected to result in minor impacts to the economic and social environment in the immediate area due to the relatively small size of the operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in MAQP #5173-00.

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

The current permitting action is for the construction and operation of an incinerator. MAQP #5173-00 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

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

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

EA prepared by: R. Payne
Date: 2/13/2017