Montana Department of
ENVIRONMENTAL QUALITY
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June 29, 2009

Dr. Carl McQuery
Animal Medical Clinic
3302 Monroe Avenue
Butte, MT 59701

Dear Dr. McQuery:

Montana Air Quality Permit #4428-00 is deemed final as of June 27, 2009, by the Department of Environmental Quality (Department). This permit is for an animal crematorium. 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,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
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Environmental Engineer
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VW:EW
Enclosure

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Animal Medical Clinic

Montana Air Quality Permit Number: 4428-00

Preliminary Determination Issued: May 11, 2009
Department Decision Issued: June 11, 2009
Permit Final: June 27, 2009

1. *Legal Description of Site*: SW¼ of Section 29, Township 3 North, Range 7 West, in Silver Bow County.

2. *Description of Project*: AMC operates a Crawford model CB200 animal crematorium/incinerator with a maximum design capacity of 70 lb/hr that requires an MAQP in accordance with ARM 17.8.770 and MCA 75-2-215.

3. *Objectives of Project*: AMC installed and commenced operation of the Crawford CB200 animal crematorium prior to obtaining an MAQP. This project objective is to assign an MAQP to AMC for the crematorium which would bring the facility into compliance with the state of Montana's permitting requirements. The project would allow AMC to safely dispose of animal remains while maintaining compliance with negligible risk requirements as discussed in Section VII of the permit analysis. Further, the project would result in business and revenue for the company.

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

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in MAQP #4428-00.

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

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

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

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

A. Terrestrial and Aquatic Life and Habitats

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

Further, the crematorium would operate within an existing building located in an area zoned as commercial and 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 project area would 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 crematorium operates within a building and does not discharge or use water during operation.

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

C. Geology and Soil Quality, Stability and Moisture

The project may affect the geology, soil quality, stability, and moisture of the project area due to pollutant deposition. The crematorium operates within a building located in an area zoned as commercial and no new construction or ground disturbance to the area is required.

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

D. Vegetation Cover, Quantity, and Quality

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

Further, the crematorium operates within an existing building located in an area zoned as commercial and no new construction or ground disturbance is required. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would be minor.

E. Aesthetics

The project would result in a minor impact to the aesthetic nature of the project area because the crematorium operates within a building located in an area zoned as commercial and a no new construction or site disturbance is required. Because the facility location area is currently designated for commercial use, the project would not change the aesthetic nature of the area. The new incinerator replaces an older unit that was previously operated at this facility. Therefore, the new equipment would not change the aesthetics from its previous state. Further, visible emissions from the source would be limited to 10% opacity and the permit includes emission control requirements. The project would result in only a minor amount of noise from normal operations.

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, as detailed in Section V, Section VI, and Section VII of the permit analysis, it has been demonstrated via air dispersion modeling that any air quality impacts from the project would be minor and would constitute negligible risk to human health and the environment.

The Department conducted air dispersion modeling to determine the ambient air quality impacts from HAPs that would be generated by operating the crematorium. 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 50 to 5000 meters in a simple terrain array.

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

G. Unique Endangered, Fragile, or Limited Environmental Resources

The Department, in an effort to assess any potential impacts to any unique endangered, fragile, or limited environmental resources in the area of operation (SW¼ of Section 29, Township 3 North, Range 7 West, in Silver Bow County, Montana), contacted the Montana Natural Heritage Program (MNHP). Search results concluded there are four known vertebrate animal species of concern located within three miles of the facility. The search area, in this case, is defined by the township and range of the proposed site, with an additional one-mile buffer. The MNHP concluded that the endangered species of gray wolf and threatened species of Canada lynx could be potentially located near the facility location. The westslope cutthroat trout and wolverine were listed as sensitive species potentially occupying the same area as the site location.

The gray wolf has a listed state conservation status of S3, signifying a state-level rank of "vulnerable." "Vulnerable" is defined by NatureServe.org as at moderate risk of extinction or elimination in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation. The global conservation status is G4, signifying a global-level rank of "apparently secure." "Apparently secure" is defined by NatureServe.org as uncommon but not rare; some cause for long-term concern due to declines or other factors. In the mid-to-late 1980s, in an effort to restore wolf populations, the gray wolf was reintroduced into three recovery areas – Northwestern Montana, Central Idaho, and the Greater Yellowstone. Although the project is located within the wolf recovery area, the wolf exhibits no particular habitat preference except wolves usually occupy areas with few roads or human disturbance, so it is unlikely that wolves would be impacted by this project. The Department would not expect the facility to have an impact on the local gray wolf population.

The Canada lynx has a listed state conservation status of S3, signifying a state-level rank of "vulnerable." The global conservation status is G5, signifying a global-level rank of "secure." "Secure" is defined by NatureServe.org as common; widespread and abundant. Canada lynx generally prefer a subalpine forest habitat. Throughout their range, shrub-steppe habitats may provide important corridor habitats for traveling between primary habitats. Typical snow conditions are important factors for lynx, with lynx occurring primarily in habitats that also receive relatively uniform and moderately deep snowfall. Due to the location of the facility within the city limits of Butte and the lack of subalpine forest environment, the Department would not expect the facility to have an impact on the local Canada lynx population.

The wolverine has a listed state conservation status of S3, signifying a state-level rank of "vulnerable." The global conservation status is G4, signifying a global-level rank of "apparently secure." Wolverines prefer a habitat of alpine tundra and boreal and mountain forests in the western mountains, especially large wilderness areas. However, dispersing individuals have been found far outside of usual habitats. They are usually in areas with snow on the ground in winter. When inactive, wolverines occupy dens in caves, rock crevices, under fallen trees, in thickets, or similar sites. Wolverines are primarily terrestrial but may climb trees. They feed on a wide variety of roots, berries, small mammals, birds' eggs and young, fledglings, and fish. Due to the location of the facility within the city limits of Butte and the lack of large wilderness area, the Department would not expect the facility to have an impact on the local wolverine population.

The westslope cutthroat trout has a listed state conservation status of S2, signifying a state-level rank of "imperiled." "Imperiled" is defined by NatureServe.org as rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to

extirpation from jurisdiction. The global conservation status is G4, signifying a global-level rank of "apparently secure." Westslope cutthroat are common in both headwaters lake and stream environments. Due to the location of the facility within the city limits of Butte and the minor amounts of emissions that could potentially settle onto any surrounding drainages or surface waters, the Department would not expect the facility to have an impact on the local westslope cutthroat trout population.

Emissions from the project could impact the previously mentioned unique, endangered, fragile, or limited environmental resources located in the project area. However, as detailed in Section V, Section VI, and Section VII 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 these unique endangered, fragile, or limited environmental resources in the project area would be minor.

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

The 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, Section VI, and Section VII of the permit analysis, project impacts on air resources in the project area would be minor due to dispersion characteristics and the low concentration of those pollutants emitted. Because the project would be considered small by industrial standards, little energy would be required for operation and the resulting impact on energy resources would be minor. The crematorium replaces an older unit that performed the same function; therefore, the demands on environmental resources have not changed.

I. Historical and Archaeological Sites

The Department contacted the Montana Historical Society, State Historical Preservation Office (SHPO) in an effort to identify any historical and archaeological sites that may be present in the area of operation. Search results concluded that there are no previously recorded historical or archaeological resources of concern within the project area. According to the SHPO, there would be a low likelihood of adverse disturbance to any known archaeological or historic site. Therefore, no impacts upon historical or archaeological sites would be expected as a result of operating the incinerator. The project would operate within an area zoned as commercial, would not disturb any surrounding structures, and would not require any new construction or ground disturbance.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the physical and biological environment in the immediate area would be minor due to the relatively small size and potential environmental impact of the operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #4428-00.

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

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

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

A. Social Structures and Mores

The project would result in minor, if any, disruption to the local social structures and mores because it would be a minor source of emissions and would replace old equipment that performed the same function. The equipment is located within an existing commercial building that has already been providing the same services utilizing similar equipment.

B. Cultural Uniqueness and Diversity

The facility is located on private property owned by the operator of AMC. The location of the facility is within a commercial district in the city of Butte. The crematorium replaced similar equipment that performed the same function and no new construction or ground disturbance is required. Therefore, the Department believes that the project would not have an effect on the cultural uniqueness and diversity of the surrounding area.

C. Local and State Tax Base and Tax Revenue

The project would result in minor, if any, impacts to the local and state tax base and tax revenue because the project would not require additional employees. In addition, no new construction is required to complete the project and the facility would be a minor industrial source of emissions. The new equipment would not be expected to change the nature of the services provided by AMC.

D. Agricultural or Industrial Production

Because the project would operate within an area zoned as commercial, the project would not affect or displace any land used for agricultural production and would not require any new construction. Further, the nature of the project would dictate that no industrial production would be affected from the proposed project.

E. Human Health

The peak annual ambient impact of HAPs from the operation of the crematorium would be 5.38E-03 $\mu g/m^3$, which is the sum of the modeled ambient impact from the combustion of animal remains with corresponding container and natural gas. The predicted annual ambient impact of each individual HAP was determined by multiplying the peak annual ambient concentration by the emission rate of the HAP. The impacts calculated for each HAP are compared to the cancer and non-cancer levels specified in Tables 1 and 2 of ARM 17.8.770. If the predicted ambient impact of a particular HAP is less than the level specified in the table and the inhalation pathway is the only appropriate pathway, that HAP can be excluded from the human health risk assessment. The calculated HAP emissions were all less than the levels established in Tables 1 and 2 of ARM 17.8.770; however, the Department chose not to exclude all of the predicted HAPs so that a human health risk assessment could be presented in the permit analysis to demonstrate negligible risk.

As detailed in Section VII of the permit analysis, a health risk assessment was conducted to determine if the proposed crematorium would comply with the negligible risk requirement of MCA 75-2-215 and ARM 17.8.770. The emission inventory did not contain sufficient quantities of any pollutant on the Department's list of pollutants for which non-inhalation impacts must be considered; therefore, the Department determined that inhalation risk would be the only necessary pathway to consider. The calculated HAP emissions were all less than the levels established in Tables 1 and 2 of ARM 17.8.770. The Department applied the negligible risk assessment criteria as defined in ARM 17.8.740(16), which defines negligible risk as "an increase in excess lifetime cancer risk of less than 1.0×10^{-6} (1.00E-06) for any individual pollutant, and 1.0×10^{-5} (1.00E-05) for the aggregate of all pollutants, and an increase in the sum of the non-cancer hazard quotients for all pollutants with similar toxic effects of less than 1.0 in order to determine negligible risk." Cancer Risk values are found in Table 1: Prioritized Chronic Dose-Response Values for Screening Risk Assessments from **www.epa.gov/ttn/atw/toxsource/table1.pdf**. For the purposes of determining the negligible risk, all pollutants from the combustion of animal remains with corresponding container and natural gas were included in the human health risk assessment.

All of the individual pollutant concentrations for the ELCR meet the acceptable risk criteria because each pollutant concentration is less than 1.00E-06 and the sum of all pollutant concentrations is less than 1.00E-05. Further, the sums of the chronic non-cancer reference exposure level quotients are less than 1.0. Therefore, the crematorium at the AMC facility meets the criteria of ARM 17.8.770 and operation of the incinerator would be considered a negligible risk to public health, safety, welfare, and to the environment. Overall, any impacts to human health in the project area would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

The project would operate within a commercial area and would not affect any access to or quality of recreation or wilderness activity.

G. Quantity and Distribution of Employment

According to the applicant, no new employees would be required for this project. Therefore, this permitting action would not affect the quantity and distribution of employment.

H. Distribution of Population

The project would not require any new employees nor require personnel to relocate to facilitate the action. The nature of the business at AMC would not change as a result of this permitting action. Therefore, there would be no expected effect on the distribution of population.

I. Demands for Government Services

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

J. Industrial and Commercial Activity

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

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the project. There is a Montana SIP in effect for the Butte PM_{10} nonattainment area; however, this facility is not affected by the provisions of the SIP.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social environment in the immediate area due to the relatively small size of the operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #4428-00.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the issuance of an MAQP for the operation of animal remains crematorium/incinerator. MAQP #4428-00 includes conditions and limitations to ensure that the facility would operate in compliance with all applicable rules and regulations. In addition, there are no known 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 Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: Ed Warner
Date: May 1, 2009