Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

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August 22, 2006

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LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

Susan Stanley
City of Billings, Public Works Department
Wastewater Treatment Plant
P.O. Box 30958
Billings, MT 59111

Dear Ms. Stanley:

Air Quality Permit #3827-00 is deemed final as of August 22, 2006, by the Department of Environmental Quality (Department). This permit is for the operation of a municipal wastewater treatment plant incorporating a digester gas-fired internal combustion engine to produce electricity. 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,

David L. Klemp
Air Permitting Supervisor
Air Resources Management Bureau
(406) 444-3490

DK:ob
Enclosure

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: City of Billings Public Works Department –
Wastewater Treatment Plant
P.O, Box 30958
Billings, MT 59111

Air Quality Permit Number: 3827-00

Preliminary Determination Issued: 7/18/06
Department Decision Issued: 8/04/06
Permit Final: 8/22/06

1. *Legal Description of Site*: The City of Billings Public Works Department – Wastewater Treatment Plant (Billings WWTP) is located at 725 Highway 87 East in Billings, MT 59111. The legal description of the site is in the Southeast ¼ of Section 27, Township 1 North, Range 26 East, in Yellowstone County, Montana.

2. *Description of Project*: The Billings WWTP operates a Waukesha internal combustion engine that is fired with digester gas collected from the digesters at the waste-water treatment facility. Digesters are used during the treatment and processing of municipal wastewater. The digesters are covered tanks operated under anaerobic conditions (i.e., without oxygen). The gas produced by the digesters is 63% methane (CH_4) and 36% carbon dioxide (CO_2) with relatively low levels of hydrogen sulfide (H_2S) and nitrogen and trace level contaminants.

   Billings WWTP collects the digester gas and uses it as fuel in the Waukesha engine to generate electricity. The Waukesha engine and associated co-generation equipment produces approximately 1.5 million kilowatt-hours of electricity annually (5-year average, 2000-2004). The electricity is used directly at the Billings WWTP facility and consequently reduces the demand for electricity from the power grid. Approximately 25% of the annual electricity demand for the Billings WWTP facility is supplied by the digester gas co-generation system. Support equipment covered under the air quality permit includes a Cleaver Brooks natural gas-fired boiler; an American Standard natural gas-fired boiler; an IBR natural gas-fired boiler; an emergency/back-up digester gas industrial safety flare; an emergency diesel generator; and various wastewater process tanks.

3. *Objectives of Project*: The objective of the proposed air quality permitting action is to bring the Billings WWTP facility into compliance with the permitting requirements of the Montana Clean Air Act.

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 air quality permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Billings WWTP demonstrated compliance with all applicable rules and regulations as required for permit issuance. 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 Permit #3827-00.

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

Further, the waste-water treatment plant is an existing facility and no new construction or ground disturbance to the area would occur as a result of the current permit action. Overall, any impact to the terrestrial and aquatic life and habitats of the proposed project area would be minor.

B. Water Quality, Quantity and Distribution:

By design, the wastewater treatment plant would result in beneficial impact to water quality in the proposed project area. Further, emissions from the proposed project would result in minor negative impacts to water quality in the proposed project area. However, as discussed in Section VI of the permit analysis any emissions and resulting deposition impacts from the project would be minor due to the low level of those pollutants emitted.

Further, the waste-water treatment plant is an existing facility and no new water use would occur as a result of the current permit action. Overall, any impact to the water quality, quantity, and distribution in the proposed project area would be minor and generally beneficial.

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

The project would not impact the geology, soil quality, stability, and moisture of the proposed project area. The waste-water treatment plant is an existing facility and no new construction or ground disturbance to the area would occur as a result of the current permit action.

Further, as discussed in Section VI of the permit analysis, the wastewater treatment plant would result in minor air pollution emissions to the outside ambient environment. These pollutants would deposit on the soils in the surrounding area. Any impact from deposition of these pollutants would be minor and typical due to the existing industrial nature of the area and the low level of those pollutants emitted. Overall, any impact to the geology and soil quality, stability, and moisture of the proposed project area would be minor.

D. Vegetation Cover, Quantity, and Quality:

The project would not impact the vegetation cover, quantity, and quality in the proposed project area. The waste-water treatment plant is an existing facility and no new construction or ground disturbance to the area would occur as a result of the current permit action.

Further, as discussed in Section VI of the permit analysis, the wastewater treatment plant would result in minor air pollution emissions to the outside ambient environment. These pollutants would deposit on the vegetation in the surrounding area. Any impact from deposition of these pollutants would be minor and typical due to the existing industrial nature of the area and the low level of those pollutants emitted. 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 minor impacts to the aesthetic nature of the proposed project area because the wastewater treatment plant would operate within an existing building located in an area zoned as commercial and no new construction or further site disturbance would be required for the project. Because the wastewater treatment plant is an existing facility located in an area zoned for commercial uses, the project would not change the aesthetic nature of the area. Further, visible emissions from the source would be limited to 20% opacity and the permit would include emission control requirements. Also, the project would not result in excess noise from normal operations. Overall, any impact to the aesthetic character of the proposed project area would be minor.

F. Air Quality:

The proposed project would result in the emission of various air pollutants to the ambient air in the proposed project area. However, based on the relatively low levels of pollutants emitted from the Billings WWTP, the Department determined that ambient air impacts from this permitting action would be minor. The Department determined that the facility, operating under the limits and conditions included in this permit, will not cause or contribute to a violation of any applicable ambient air quality standard. Overall, any impact to the air quality of the proposed project area would be minor.

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

Through the Natural Resource Information System (NRIS) the Department contacted the Montana Natural Heritage Program (MNHP) in an effort to identify any species of special concern that may be located within or near the Billings WWTP site (southeast ¼ of Section 27, Township 1 North, Range 26 East, in Yellowstone County, Montana). Search results concluded that there are four such species of special concern on file for the area. Further, the MNHP report indicated *inferred extent* for two additional species of special concern. *Inferred extent* refers to an area that can be inferred to be probable occupied habitat based on the spatial location of the direct observation of a species and general information available for the foraging area or home range size of the species. Area in this case is defined by the Township and Range of the proposed site, with an additional one-mile buffer. The four species of special concern located within the defined area include the *Apalone spinifera* (Spiny Softshell), Heterodon nasicus (Western Hognose Snake), Falco perigrinus (Perigrine Falcon), and Lampropeltis triangulum (Milk Snake) and the two species identified through *inferred extent* include Centrocercus urophasianus (Greater Sage Grouse) and Euderma maculatum (Spotted Bat). While these species of special concern may be found in specific habitats within or near the defined area, the MNHP search did not indicate that these species of special concern would locate directly on or relatively near the existing industrial site. Given the existing industrial nature of the project area, it is unlikely that these species of special concern would locate on or near the project site and thus unlikely that these species of special concern would realize any impact from the wastewater treatment plant operations beyond minor air emission impacts discussed in greater detail below.

Emissions from the proposed project could impact the previously highlighted unique, endangered, fragile, or limited environmental resources located in the proposed project area. However, 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 and typical due to the existing industrial nature of the area. Overall, any impact to unique endangered, fragile, or limited environmental resources of the proposed 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 as discussed in Section 7.B of this EA. In addition, the proposed project would permit a digester gas engine which has historically been responsible for producing enough energy to provide approximately 25% of the facilities annual electricity needs. Therefore, the project would impact energy resources; however, any impacts would be minor and positive due to the relatively small size of the industrial operations and the ability to produce energy thereby avoiding reliance on additional energy resources in the area.

Further, as discussed in Section VI of the permit analysis, the wastewater treatment plant would result in minor air pollution emissions to the outside ambient environment. Any impact from the emission of these pollutants would be minor and typical due to the existing industrial nature of the area and the low level of those pollutants emitted. Overall, any impact to the demands on environmental resource of water, air, and energy in the proposed project area would be minor.

I. Historical and Archaeological Sites:

The proposed project would not result in any impact on historical and archaeological sites in the proposed project area. The wastewater treatment plant would operate within an existing building located in an area zoned as commercial and would not require any additional construction and ground disturbance.

According to previous correspondence from the Montana State Historic Preservation Office, there is low likelihood of any disturbance to any known archaeological or historic site, given previous industrial disturbance within the area. Therefore, the project would not impact any known historic or archaeological site that may be located within or near the proposed operating site.

J. Cumulative and Secondary Impacts:

The Billings WWTP is an existing facility. Emissions from the existing Billings WWTP would continue to impact the above-cited physical and biological resources of the environment after issuance of Permit #3827-00. However, the purpose of the current permit action would be to bring the existing Billings WWTP into compliance with the Montana Clean Air Act through issuance of the required Montana Air Quality Permit. Therefore, because the current permit action would not result in any changes to the existing facility, no direct or secondary and cumulative impacts to the above-cited physical and biological resources of the project area would occur as a result of the current permit action.

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 proposed operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in Permit #3827-00.

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 ECENOMIC AND SOCIAL EFFECTS: The Department has prepared the following comments.

A. Social Structures and Mores:
B. Cultural Uniqueness and Diversity:

The proposed project would not have any impact on the above economic and social resources of the proposed area of operation because the project is small by industrial standards and operations would take place within an existing building and no additional construction or employment would be required.

Further, the surrounding area is currently and would remain commercial/industrial in nature. The predominant use of the surrounding area would not change as a result of the proposed project.

C. Local and State Tax Base and Tax Revenue:

The proposed project would have a minor impact on the local and state tax base and tax revenue because the project is small by industrial standards and would not result in any increased commercial activity beyond the proposed project. Further, the plant would operate within an existing industrial site with no new construction or ground disturbance occurring as a result of the current permit action.

D. Agricultural or Industrial Production:

The proposed project would operate within an existing industrial area; therefore, the project would not affect or displace any land used for agricultural production. Further, because the current action would not require any additional industrial construction and the facility is an existing industrial operation, it is unlikely that the project would impact any industrial production.

E. Human Health:

Permit #3827-00 would include limits and conditions to ensure the facility would be operated in compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health. As described in Section III of the permit analysis, the air emissions from the proposed facility would be minimized by the use of best available control technology (BACT) as required by Permit #3827-00. Overall, only minor impacts would be expected on human health from the proposed operations.

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

Because the proposed project would operate within an existing industrial area, the project would not affect any access to or quality of any recreation or wilderness activities in the area.

G. Quantity and Distribution of Employment:
H. Distribution of Population:

The proposed project would not require any new employment in the area. The project would utilize existing employee(s) to operate the plant; therefore, the proposed project would not impact the quantity and distribution of population and employment in the area.

I. Demands for Government Services:

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

J. Industrial and Commercial Activity:

The proposed project would result in only a minor impact on local industrial and commercial activity because the proposed project would operate within an existing industrial area, would not require any additional industrial construction, and would not result in additional industrial production. Overall, any industrial or commercial activity occurring as a result of the project would be minor.

K. Locally Adopted Environmental Plans and Goals:

The Billings area is currently under a SIP-call action through the Federal Clean Air Act authority Section 110(k)(5). The SIP-call area is not considered a "non-attainment" area, but does have a regulatory control plan for SO_2. Existing and major new sources of SO_2 locating in the Billings area are regulated under the Billings SO_2 SIP. In the view of the Department, the amount of controlled emissions from this relatively minor source of emissions would not cause or contribute to an exceedance of any ambient air quality standard.

The Department is not aware of any other locally adopted environmental plans or goals in the immediate area affected by the proposed project. The state standards would be protective of the proposed project area.

L. Cumulative and Secondary Impacts:

The Billings WWTP is an existing facility and would continue to impact the above-cited social and economic resources of the environment after issuance of Permit #3827-00. However, the purpose of the current permit action would be to bring the existing Billings WWTP into compliance with the Montana Clean Air Act through issuance of the required Montana Air Quality Permit. Therefore, because the current permit action would not result in any changes to the existing facility, no direct or secondary and cumulative impacts to the above-cited physical and biological resources of the project area would occur as a result of the current permit action.

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 proposed operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in Permit #3827-00.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permit action is for the construction and operation of a wastewater treatment plant. Permit #3827-00 includes conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, as detailed in the above EA there are no significant impacts associated with the proposed project.

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

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

EA prepared by: M. Eric Merchant, MPH
Date: July 17, 2006