DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air and Waste Management Bureau
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Montana Ethanol Project, LLC
511 Central Avenue West, Suite 3
Great Falls, MT 59404-2848

Air Quality Permit Number: 2835-06

Preliminary Determination Issued: July 27, 2006
Department Determination Issued: August 29, 2006
Permit Final:

1. *Legal Description of Site:* MEP's ethanol production facility would be located approximately ½ mile northeast of Great Falls, Montana, in parcel 4, in the NE¼ of the NW¼ of Section 3, Township 20 North, Range 4 East, Cascade County, Montana.

2. *Description of Project*: The Department proposes to modify MEP's Montana Air Quality Permit (MAQP) to reflect a company name change from AgriTech to MEP and to update the facility's nominal fuel-grade ethanol production capacity from 100 million gallons per year (MMGAL/yr) to 125 MMGal/yr. In addition, the facility requested to modify the emissions control system for the DDGS dryers, to add two new barley hammermills, and to update the facility wide emissions inventory to reflect the proposed changes and changes in certain vendor-provided emission factors.

3. *Objectives of Project*: The objective of the project would be to increase MEP's fuel-grade production capabilities from 100 MMGal/yr to 125 MMGal/yr at the proposed ethanol production facility, and to control VOC emissions more efficiently.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no action" alternative. The "no action" alternative would deny the issuance of the MAQP to MEP and would not allow the facility to increase capacity or change control techniques. Under the "no action" alternative, none of the impacts described in this EA would occur.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in Permit #2835-06.

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 would be reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and would 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.

Potential Physical and Biological Effects							
		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 Resource			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

This permitting action would have a minor effect on terrestrial and aquatic life and habitats, because the proposed project would affect an already permitted (although not built) industrial property that has already been disturbed (through agricultural activities). In addition, minor effects from the increase in production might be seen. The small amount of air impact would correspond to an equally small amount of deposition.

Aquatic life and habitats would realize little or no impact from the proposed facility because MEP is not proposing to directly discharge any material to the surface or ground water in the area (as all water/wastewater drainage from the facility would be handled by the City of Great Falls) and the resulting air emissions to any water body would be very minor.

B. Water Quality, Quantity, and Distribution

This permitting action would have little to no effect on the water quality, water quantity, and distribution because there would be no discharges to groundwater or surface water associated with this permitting action. A small increase in production capacity would be expected as a result of this project, but should have only a minor impact, if any impact at all, on water.

C. Geology and Soil Quality, Stability, and Moisture

This permitting action would have a minor effect on geology and soil quantity, stability, and moisture, because the proposed project would affect an already permitted (although not built), industrial property that has already been disturbed (through agricultural activities). A small portion of land would be disturbed (in addition to that permitted under #2835-03) for two additional barley hammermills. The increase in production capacity for this project would have a minor effect on the soil stability and moisture, however the air quality permit associated with this project contains limitations to minimize the effect of the emissions (including BACT and an emission limitation) on the surrounding environment. Overall, the impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

This permitting action would have a minor effect on vegetation cover, quantity, and quality. The proposed project would affect an already permitted (although not built) industrial property that has already been disturbed (through agricultural activities). No additional vegetation on the site beyond that permitted in #2835-03 would be disturbed for the project. The increase in production capacity for this project might have a minor effect on the surrounding vegetation, however the air quality permit associated with this project contains limitations to minimize the effect of the emissions (including BACT and an emission limitation) on the surrounding environment. The small amount of air impact would correspond to an equally small amount of deposition. Therefore, any impact to the vegetation cover, quantity, and quality would be minor.

E. Aesthetics

The impacts to the aesthetics of the area from this project would be minor because the additional barley hammermills, and the proposed regenerative thermal oxidizers that would be implemented as a part of this permit action, would not change the overall appearance of the facility permitted under Permit #2835-03. No noise or traffic impacts are anticipated as a result of this project.

F. Air Quality

The air quality impacts from the construction and operation of the proposed modified facility would be minor because Permit #2835-06 would include conditions limiting emissions of air pollution from the source. Although throughput of the facility would increase, overall emissions for the facility would decrease from the emissions currently permitted under Permit #2835-04 due to using more efficient technology for controlling VOCs, CO and total particulate.

In addition, the Department determined, based on the ambient air quality dispersion modeling analysis conducted for the proposed permit modification, that the impact from the proposed permit modification would be minor. The Department believes that facility changes considered under the proposed permit modification would not cause or contribute to a violation of any ambient air quality standard. The Clean Air Act, which was last amended in 1990, requires the U.S. EPA to set national NAAQS for pollutants considered harmful to public health and the environment. In addition, Montana has established equally protective or, in some cases, more stringent standards for these pollutants termed MAAQS. The Clean Air Act established two types of NAAQS, Primary and Secondary. Primary Standards set limits to protect public health, including, but not limited to, the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary Standards set limits to protect public

welfare, including, but not limited to, protection against decreased visibility, damage to animals, crops, vegetation, and buildings. Primary and Secondary Standards are identical with the exception of SO_2 which has a less stringent Secondary Standard. The air quality classification for the immediate area of proposed MEP operation is considered "Unclassifiable or Better than National Standards" (40 CFR 81.327) for all pollutants.

Overall, any impacts to the air quality of the project area from MEPs proposed permit modification, including construction activities, normal operations resulting in air emissions and deposition of air emissions would be minor and in compliance with all applicable MAQQS and NAAQS.

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

To identify any unique, endangered, fragile, or limited environmental resources in the immediate area of the proposed project, the Department contacted the Montana Natural Heritage Program of the Natural Resource Information System (NRIS), which catalogues species of special concern of the U.S. Forest Service, U.S. Fish and Wildlife Service; and Bureau of Land Management. The Natural Heritage Program files identified eight species of special concern in the 1-mile buffer area surrounding the section, township, and range of the proposed facility. The two plant species identified that were observed in the same U.S.G.S quadrangle (Northeast Great Falls) as the MEP facility were the *entosthodon rubiginosus* and the *funaria americana* (no common names listed for either). Both of these species are found on or near the Missouri River. The search results indicated that both of these plant species were previously recorded within a 5-mile radius. The 5-mile radius does include several miles of the Missouri River. Six species of special concern were identified in the nearby Southeast Great Falls Quadrangle including the *najas guadalupensis* (guadalupe water-nymph), *psilocarphus brevissimus var brevissimus* (dwarf woolly-heads), *carex sychnocephala* (many-headed sedge), *bacopa rotundifolia* (roundleaf water-hyssop), *centunculus minimus* (chaffweed), and *elatine californica* (california waterwort). All of these species are plant species and all except for *elatine californica* (which did not list a site description) occur near ponds, moist meadows, stream edges, and similar habitats. From the information provided by NRIS, no unique, endangered, fragile or limited environmental resources were identified on the proposed project site location.

The impact to unique, endangered, fragile or limited environmental resources from this project would be minor because the project would occur at an already disturbed site and would be minor in scope with respect to emissions increases. In addition, due to the plume characteristics from the proposed facility, the emissions would predominantly be carried to the north and east of the facility, away from the location of the plant species of special concern.

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

As described in Section 7.B of this EA, this permitting action would have little to no effect on the environmental resource of water as there would be no discharges to groundwater or surface water associated with this permitting action.

As described in Section 7.F of this EA, the impact on the air resource in the area of the facility would be minor because the air emissions from the proposed project are low and the facility would be required to maintain compliance with their air quality permit as well as national and state ambient air quality standards. There is no national or state ambient air quality standard for VOCs, however, VOC emissions are taken into consideration when evaluating compliance with the ozone standard.

A minor impact to the energy resource is expected, a new water scrubber, which would have small energy requirements (particularly in light of the overall facility's energy demands), would be operating in the fermentation system. Energy would be required to power fans for moving gases through the water scrubber system. Overall, the impacts to demands on environmental resource of water, air, and energy would be minor.

I. Historical and Archaeological Sites

The proposed project would occur within the boundaries of the already permitted MEP facility area. That area had been previously disturbed by agricultural activities. The Department contacted the Montana Historical Society – State Historic Preservation Office (SHPO) in an effort to identify any historical, archaeological, or paleontological sites or findings near the proposed project prior to the issuance of Permit #2835-03. SHPO's records indicate that there is one previously recorded historic site within the designated search locale. Site 24CA0264 is the old Chicago, Milwaukee, St. Paul, and Pacific Railroad bed. However, this site code covers the entire railroad bed area that lies within Cascade County, not just that area that resides within the proposed MEP facility boundaries. The Manchester Overpass on that railroad line, which is the listed site name for Site 24CA0264, is located West of Great Falls. However, part of the railroad line appears to have been located just south of the proposed facility area. No eligible (with respect to the National Register of Historic Places) structures or buildings exist in the proposed MEP facility area associated with this site code. In addition, because of the fact that severe agricultural activities have occurred in the area, the likelihood of finding undiscovered or unrecorded historical properties is practically nil. A cultural resource inventory had been previously conducted in the area: *Cultural Resources Survey of Approximately 1250 Acres in the Vicinity of Malmstrom Air Force Base Great Falls, Montana* by T. Weber Greiser. It was conducted in 1988 by the U.S. Air Force. Based on the fact that the proposed project area had been previously surveyed and also previously disturbed, SHPO maintains that there is low likelihood that this project would impact unknown or unrecorded cultural properties. Overall, the impacts to historical and archaeological sites would be minor.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the physical and biological aspects of the human environment would be minor because the impact with respect to the already permitted (although not built) MEP facility is very small. In addition, the overall air impact from the proposed MEP facility combined with the other Great Falls industrial sources is small. The highest impacts from each of the other nearby industrial sources (Montana Refining Company, Malmstrom Air Force Base, the proposed Southern Montana Electric Coop, and the proposed NorthWestern Montana First Megawatts, LLC) would not occur at the same receptor, and the pollutant of concern for each of the nearby industries is generally different.

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

Potential Social and Economic Effects							
		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 SOCIAL AND ECONOMIC EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed project would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the project would be constructed at a site permitted for industrial use. The proposed project would not change the nature of the site in its permitted use.

B. Cultural Uniqueness and Diversity

The proposed project would not cause a change in the cultural uniqueness and diversity of the area because the land is currently permitted to be used as an ethanol production facility; therefore, the land use would not be changing for this permit action.

C. Local and State Tax Base and Tax Revenue

This project would have a minor effect on the local and state tax base and tax revenue because the proposed change would allow MEP to increase the fuel-grade ethanol production capacity from 100 MMGal/yr to 125 MMGal/yr. The fuel-grade ethanol and solid co-products would provide domestic alternatives for the area to replace petroleum-based gasoline and other animal feeds, respectively.

D. Agricultural or Industrial Production

The proposed project would not result in a reduction of available acreage or productivity of any agricultural land; therefore, agricultural production would not be affected. With respect to the usage of corn and barley in the ethanol production process, the facility would provide added support for the area corn and barley industries. The current permit action increases the potential ethanol production capacity; therefore, with the increase in ethanol production capacity, there would be minor impact to the agricultural and industrial production.

E. Human Health

As described in Section 7.F of the EA, the impacts from this facility on human health would be minor because the emissions would be greatly dispersed before reaching an elevation where humans would be exposed. MEP conducted a screening-level human health risk assessment. The model-predicted impacts were compared against screening threshold concentrations for cancer risk and acute and chronic non-cancer risks. All modeled concentrations were below the relevant screening threshold concentrations. In addition, as described in Section 7.F, the modeled impacts from the proposed project, taking into account other dispersion characteristics, are well below the MAAQS and NAAQS. The current permit action would incorporate conditions to ensure that the facility would be operated in compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health. Therefore, any impacts to human health would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

No significant recreational or wilderness activities exist within the MEP property boundaries. The property is currently used as a wheat field. Recreational activities exist in the area surrounding the permitted site location for MEP. The closest recreational opportunities appear to be the Rivers Edge Trail (closest point approximately ¾ mile), Giant Springs Heritage State Park (approximately ¾ mile), the Lewis and Clark Interpretive Center (approximately ¾ mile), the Missouri River (closest point approximately ¾ mile), the North Shore Conservation Easement Lands, Black Eagle Dam, Rainbow Dam, Cochrane Dam, Ryan Dam, and Morony Dam. Based on the small amount of emissions increase for the project (see Section 7.F of the EA) and the distance between and direction from the recreational sites and the MEP project site, the impacts to the previously mentioned recreational opportunities and other recreational opportunities in the area would be minor, if any at all.

G. Quantity and Distribution of Employment

The proposed project would not result in any impacts to the quantity or distribution of employment at the facility or surrounding community. No employees would be hired at the facility as a result of the project.

H. Distribution of Population

The proposed project does not involve any significant physical or operational change that would affect the location, distribution, density, or growth rate of the human population. Therefore, there would be no impacts to the distribution of population.

I. Demands of Government Services

The demands on government services would experience a minor impact. The primary demand on government services would be the acquisition of the appropriate permits by the facility (including local building permits, as necessary, and a state air quality permit) and compliance verification with those permits.

J. Industrial and Commercial Activity

The proposed change would allow MEP to increase production capacity of the fuel-grade ethanol. The level of industrial and commercial activity would not increase at the facility as a result of the proposed project, nor is the industrial and commercial activity of the surrounding area expected to increase. Therefore, no effect on the industrial and commercial activity would occur.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans and goals that would be affected by the proposed change to the facility. The conditions associated with the Great Falls CO Limited Maintenance Plan would apply within the Great Falls area regardless of this project's status. The planning efforts by the City of Great Falls for the Missouri River corridor also would not be affected by this proposed change.

L. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the social and economic aspects of the human environment would be minor because minor impacts may be seen in the areas of human health, quality of recreational and wilderness activities, and demands of government services. The proposed project provides MEP with operational flexibility in the instance that no outside entity chooses to build an off-site CO_2 processing facility in the area. The project is associated with an already permitted facility and would not change the culture or character of the area.

Recommendation: No 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 modification of MEP's already permitted plant configuration to add the ability to vent VOCs from its fermentation process if an off-site CO_2 recovery facility is unavailable. Permit #2835-06 would include conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. Based on the foregoing review, there are no significant impacts associated with this proposal and the scope of the review is appropriate considering the nature and complexity of the project.

Other groups or agencies contacted or that may have overlapping jurisdiction: None.

Individuals or groups contributing to this EA: Department of Environmental Quality (Air Resources Management Bureau and Resource Protection Planning Bureau)

EA prepared by: Julie Merkel
Date: 07/11/06