ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

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Responsiveness Summary for Public Questions and Comments on the Construction Permit Application from The Andersons Marathon Ethanol, LLC for an Ethanol Plant in Champaign, Illinois

Site Identification No.: 019809AAC
Application No.: 06050063

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INTRODUCTION

The Andersons Marathon Ethanol, LLC (The Andersons) has applied for an air pollution control construction permit to build a fuel ethanol production plant in Champaign.

Upon review of comments received during the public comment period and final review of the application, the Illinois Environmental Protection Agency (Illinois EPA) has determined that the application meets the standards for issuance of a construction permit. Accordingly, on June 20, 2007, the Illinois EPA issued a permit to The Andersons to construct the proposed plant. The plant must be constructed and operated in accordance with all applicable regulations and the terms and conditions of the issued permit.

The issued permit includes a number of additional requirements for the proposed plant compared to the draft permit, as well as various clarifications to conditions, based on public comments. In particular, the issued permit contains additional limitations on certain operations and additional requirements for monitoring and recordkeeping to assure that the proposed plant would not be a major source of emissions under the federal rules for Prevention of Signification Deterioration (PSD), 40 CFR 52.21.

DESCRIPTION OF PROPOSED PLANT

The Andersons has proposed to construct a plant to produce ethanol from corn. The plant would be designed to have a nominal capacity of 125 million gallons per year. The denatured ethanol produced by the plant would be used as motor vehicle fuel. When added to gasoline, ethanol is an octane enhancer and oxygenated fuel additive, which reduces hydrocarbon and carbon monoxide emissions in vehicle exhaust. The plant would produce ethanol by batch fermentation of ground corn, followed by processing to separate out and purify the ethanol. The plant would also produce animal feed from the stillage material remaining after the fermentation process. The plant would have facilities to receive raw material (grain) and ship products (fuel ethanol and feed) by both truck and rail. Natural gas would be used as the fuel for the plant.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions. An air pollution control permit application must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial technical review of The Andersons' application, the Illinois EPA Bureau of Air made a preliminary determination that the application for the proposed plant met the standards for issuance of a construction permit and prepared a draft permit for public review and comment.

The public comment period began with the publication of a notice in the Champaign News Gazette on January 8, 2007. The notice was also published in this newspaper on January 15 and 22, 2007.

A public hearing was held on February 27, 2007 at Parkland College in Champaign to receive oral comments and answer questions regarding the application and draft air permit. The comment period closed on March 29, 2007.

AVAILABILITY OF DOCUMENTS

The permit issued to The Andersons and this responsiveness summary are available on the Illinois Permit Database at www.epa.gov/region5/air/permits/ilonline.htm (please look for the documents under All Permit Records (sorted by name), State Construction Permits). Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

COMMENTS AND QUESTIONS WITH ILLINOIS EPA RESPONSES

General

1. Have other feedstocks than corn been considered for the plant, such as cellulosic material from prairie grasses?

   At the present time, corn is the agricultural feedstock for production of ethanol in the United States. Cellulosic ethanol production cannot yet be considered commercially available. The process technology for economically converting cellulose into ethanol is still being developed, especially for the more stable hemi-cellulose. Accordingly, there is not a significant market for cellulosic crops, such as prairie grasses, or corn stover, so that farmers do not routinely plant or harvest these materials. This also means that there are not yet facilities and infrastructure to store and transport such materials in the volumes that are needed for them to be used as feedstocks or fuel for a major industrial facility like the proposed plant.

2. Will steam (water vapor) from the plant pose a concern for fogging on major roadways and I-74?

   Fogging, as can be caused by a cooling tower under certain weather conditions, is a very localized phenomenon. Fogging should not be a significant issue for the cooling tower at the proposed plant given the distance of the cooling tower at the plant from interstates and major roadways.

3. What would be the environmental impact (emissions) of the truck traffic serving the plant?

The exhaust from the trucks serving the plant should not significantly affect air quality in the area. This is because of the relatively small number of trucks that would serve the plant, which is estimated to be at most about 200 per day, assuming a six day schedule for trucking, Monday through Saturday.

Water Usage

4. Why is the water usage rate of the proposed plant, at 8 to 1, greater than 3 to 1, as flouted by the ethanol industry? Why is the water to ethanol ratio of the proposed plant so high compared to industry information, as provided by the Renewable Fuels Association?

   The Andersons has indicated that the current design for the proposed plant shows a water usage rate of about 6 gallons of water per gallon of ethanol produced. In actual practice, the water usage rate should be better than the design value. The water usage rate of a fuel ethanol plant is determined by a number of site-specific factors so that the water usage of a particular plant can vary significantly from average data. In the case of the proposed plant, the cooling tower is the principal unit for water consumption since the plant would be developed to not discharge process wastewater. The key factor for the usage of water for the cooling tower is the relatively high level of quality that must be maintained in the blowdown stream associated with the cooling tower. This necessitates a fairly high usage of water to maintain acceptable levels of contaminants in the effluent to protect and maintain acceptable water quality in the receiving stream.

5. Equistar currently pumps water from the Mahomet Aquifer using wells drilled just outside of Champaign. The pumped water goes into the Kaskaskia River to dilute wastewater discharges at an Equistar facility down river in Tuscola. While proponents of the proposed plant claim that its wastewater discharge would reduce or replace these withdrawals of water from the Mahomet aquifer by Equistar Chemical, this is unlikely. This is because the wastewater from the proposed plant would not eliminate the need for this practice since the plant's wastewater will have its own loading of contaminants and will not be able to dilute Equistar's wastewater.

   The Illinois EPA is not able to confirm that the wastewater discharge of the proposed plant would result in a reduction in the amount of water pumped from the Mahomet Aquifer by Equistar. In particular, the Illinois EPA does not have factual information indicating that the water flow provided by the proposed plant would substitute for the water currently being pumped by Equistar. The Illinois EPA also has not been presented with copies of any proposed agreements between Equistar and The Andersons that would address this matter.

6. Has The Andersons considered the use of effluent from the City of Champaign's southwest treatment plant (nominally 22 million gallons per day).

The Andersons has indicated that this source of water was considered. However, the distance between the proposed plants and this existing wastewater treatment plan currently makes use of this effluent cost-prohibitive.

7. Has The Andersons investigated dry cooling?

The Andersons has indicated that dry cooling was not considered to any significant extent. This is because the increased capital and operating costs associated with dry cooling outweigh the savings from reduced water usage, making dry cooling cost-prohibitive. In Illinois, new ethanol plants, as well as existing ethanol plants, use wet cooling, rather than dry cooling, to provide the cooling that the plants need.

8. What coordination has there been with other proposed ethanol plants or public water supplies with respect to water withdrawals?

The Andersons has indicated that it has consulted with nearby public water supplies, as they might serve as the water supply for the plant. It has not consulted with other companies that have expressed interest in developing ethanol plants in the area, with which it would potentially be competing.

9. The water consumption of the plant would be a threat to the Mahomet Aquifer unless operational water conservation measures are mandated.

Available information does not indicate that the water consumption of the plant, as currently proposed, would be a threat to the Mahomet Aquifer. If the water consumption of the plant had to be reduced to protect the Mahomet Aquifer there are several options, with a range of associated monetary and energy costs, to reduce water usage. These include installation of a dry cooling tower or construction of a pipeline and treatment facilities that would allow the plant to use effluent from a wastewater treatment plant. In addition, reductions in water usage should be expected over time as developments occur in the technology to produce ethanol, which improve energy efficiency and reduce the amount of cooling that must be supplied to the plant by the cooling tower system. Finally, improvements should also be expected over time in the technology for handling water at the plant, such as more efficient reverse osmosis units, that enable water to be more efficiently used and reused.

10. The continued viability of the Mahomet Aquifer is threatened by over pumping, such that with a few high demand users, the surplus could vanish. The Mahomet Aquifer and Champaign County are hot spots in need of management of its water consumption.

The importance of the Mahomet Aquifer as the principal water supply for Champaign County and many other Counties in Central Illinois is well recognized. The status of this critical resource is watched over by the State of Illinois, under the leadership of the Illinois Water Survey. The Mahomet Aquifer, and the State of Illinois's work with regard to this aquifer, are also carefully watched over by the

Mahomet Aquifer Consortium, an organization made of communities and entities that rely on the aquifer for water.

11. What safeguards will be in place to make sure that the Mahomet Aquifer is not dewatered?

While the aquifer is not currently protected by law or regulation, programs are in place, as discussed above, to monitor the aquifer. This monitoring should allow necessary statutory and regulatory measures to protect the aquifer to be enacted or adopted in a timely manner.

In addition, as explained by The Andersons at the public hearing, another safeguard of the Mahomet Aquifer as specifically related to the proposed plant, and other industrial facilities that use significant quantities of water, is their own self-interest as they depend on this aquifer for their operation. These companies and institutions have a critical interest in ensuring an adequate supply of water, without which operations may have to be curtailed to levels at which they are no longer economically viable. In addition, they have an interest in regulatory programs that are cost-effective and equitably distribute costs of controls with reasonable time for changes to equipment or operation for compliance. These interests are best served by careful monitoring of the status of the Mahomet Aquifer.

12. Reporting of water withdrawals is voluntary, which makes management difficult. Will The Andersons publicly report its usage of water to the Illinois State Water Survey?

The Andersons has stated that it will report the water usage of the proposed plant to the Illinois State Water Survey. As discussed above, it is in the self-interest of users of water to report this data as it will facilitate a reliable water supply for their operations.

13. An ethanol plant is not the best use of the available water resource, given the small number of jobs that are generated compared to the usage of water.

There are many economic benefits from ethanol production other than employment, including the support of corn prices and Illinois' rural economy and reduced reliance upon imported crude oil.

14. Is there a price to use water from the aquifer, other than operating expenses?

A fee program for withdrawals of water from aquifers, whether by individuals, public water supplies, companies or other entities, does not exist in Illinois.

15. Holistic stewardship of water resources is needed, recognizing the connection between surface and groundwater, with maintenance of minimum stream flows and understanding of ecological relationships and encouragement of socially responsible use of water resources.

Comment acknowledged.

Wastewater Discharge

16. The wastewater discharge from the plant, which appears to be about 2 gallons per gallon of ethanol produced, would need to be permitted to protect water quality.

    This is correct. Like other wastewater discharges into waters of the state, The Andersons will have to obtain a National Prevention of Discharge Elimination System (NPDES) permit from the Illinois EPA for its discharge into the Kaskaskia Ditch.

17. What will be the impact of the wastewater discharge of the plant (volume and quality) on the Kaskaskia Ditch, which is the receiving stream?

    The potential impacts of wastewater will be addressed as part of the processing of the separate permit application for the wastewater discharge. These impacts are not reviewed as part of the application for the air pollution control construction permit.

18. When will the wastewater discharge permit application be submitted?

    The Bureau of Water of the Illinois EPA received this application on May 7, 2007.

19. Given the natural conditions in the receiving stream (low flow in late summer and fall), the receiving stream may not be able to handle the discharge without erosion of bottom sediments or destruction of aquatic habitat. What steps will be taken to protect the receiving stream from scouring and erosion, with a discharge that could be as much 500 gallons/minute?

    As a technical matter, wastewater outflows can be readily designed to protect receiving streams from scouring and erosion. From a regulatory perspective, the design of outflows is routinely addressed by parties other than the Illinois EPA, including the US Army Corps of Engineers and local drainage districts, as they are responsible for or concerned about the physical integrity of receiving streams and waterways. Nonetheless, this comment has been referred to the Illinois EPA's Bureau of Water, so that it may be considered, as appropriate, during the review and processing of the application for the wastewater discharge permit.

20. I am concerned about the plant acting to concentrate the contaminants that are naturally present in the incoming water, so that the levels of these contaminants are much higher in the wastewater.

    The wastewater permit will limit the concentrations of various contaminants that are naturally present in the water supply to protect the water quality in the

receiving stream, the Kaskaskia Ditch. This is necessary, as observed by this comment, because the levels of these contaminants in the wastewater will be higher than in the natural water supply because of the concentrating effect of the cooling tower, in which water is lost to the atmosphere by evaporation.

Other

21. Will the public have access to the compliance records that are kept by The Andersons?

The public will have access to the compliance reports submitted to the Illinois EPA by The Andersons and to inspection reports prepared by the Illinois EPA for the plant. Access to these reports would be governed by Illinois Freedom of Information Act, which requires governmental bodies to generally provide copies of specific records and other documents in their possession to a member of the public upon formal request. The actual operating records kept by The Andersons would only be available as the Illinois EPA obtained copies of particular records, so that they would become "Agency documents" in the possession of the Illinois EPA.

FOR ADDITIONAL INFORMATION

Questions about the public comment period and permit decision should be directed to:

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