Public Notice of intent to modify Air Permit
06700061-102

General information

Public comment period begins: June 23, 2020
Public comment period ends: July 23, 2020 (4:30pm)
Current permit issued: August 15, 2017
Current permit expiration date: August 15, 2022

Name and address of Permittee:
Bushmills Ethanol
17025 Highway 12 NE
Atwater, Minnesota 56209

Facility name and location:
Bushmills Ethanol
17025 Highway 12 NE
Atwater, MN 56209-9684
Kandiyohi County
T119N, R33W, Section 010

MPCA contact person:
Tarik Hanafy
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155
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Email: tarik.hanafy@state.mn.us
File manager phone: 651-757-2728 or 1-844-828-0942

The Minnesota Pollution Control Agency (MPCA) Commissioner has made a preliminary determination to issue this permit. A draft permit and technical support document are available for review on the MPCA Public Notices webpage at http://www.pca.state.mn.us/publicnotices or at the MPCA office address listed under the MPCA contact person. The MPCA will mail or email a copy of the draft permit upon request. Comments, petitions, and other requests must be received at the MPCA in writing on or before the public comment period end date and time identified above.

Description of Bushmills Ethanol

Bushmills Ethanol (Bushmills) is a dry mill ethanol production plant located west of Atwater, Minnesota on U.S. Highway 12. The facility currently produces Dried Distiller’s Grain with Solubles (DDGS), wetcake and corn oil as co-products. The Bushmills facility is permitted to produce annually up to 100 million gallons of undenatured ethanol and 330,000 tons of DDGS. The facility is authorized to receive up to 1.075 million tons of grain per year; and load out up to 7.5 million gallons of denaturant.

Particulate emissions from the truck and rail unloading area, elevators, conveyers, and corn bins exhaust through a negative pressure ventilation system, which continuously pulls air from these sources through a baghouse. Grain from the surge bin feeds into a hammermill. A conveyor moves the milled grain from the hammermill into the blender. The blender mixes the milled grain with water to start the ethanol production process. The air exiting the hammermills routes to a baghouse. There are two baghouses to control particulate emissions from all hammermills. The hammermills are located indoors.

The facility is permitted for one RTO which provides VOC, PM, PM10, PM2.5 and HAP emission control by combustion. Some vents from distillation, as well as other process tank vents from other vessels are tied to the centrate blower. The gas coming off the fermenters flows up through a bed of stainless steel structured packing inside a direct contact scrubber. Water flows down through the bed. A continuous blow-down of this water flows back into the process stream. CO2 and other non-condensing gases leaving the scrubber are vented to the atmosphere. The gas coming off the centrate blower and pre-fermentation equipment, with exceptions, vents to the RTO. Direct venting to the atmosphere from the cook water tank, liquefaction tanks, and slurry tank 2 are authorized by this permit.

The beer resulting from the fermentation runs through a continuous vacuum distillation system to remove and rectify the ethanol. The vapor outlet of the distillation column gets piped directly to a set of condensers that discharge liquid ethanol to the 190-proof tank. From the 190-proof tank, the liquid passes through a molecular sieve and then to the 200-proof condenser and stored in the 200-proof storage tank. The gases leaving the condensers, evaporators, receiver tanks, centrate tanks, dewatering devices and corn oil tanks are typically vented to the RTO prior to venting to the atmosphere. Direct venting to the atmosphere from the thin stillage tank, whole stillage tank and syrup tank are authorized by this permit.

DDGS dries in a rotary drum dryer system. Exhaust from the dryers passes through the RTO. DDGS is conveyed and dropped into an enclosed building. DDGS is removed from the pile by front end loaders, then dropped into a drop pit and conveyed via an elevator and conveyor for load out. These conveyors and elevator are vented to a baghouse. The handling operations in the storage building are not aspirated to controls. DDGS is loaded into trucks/railcars with the exhaust air passing through a baghouse prior to venting to the atmosphere.

The product gets pumped daily from the 200-proof tank or to one of the storage tanks. Natural gasoline may be added as denaturant via in-line blending. Internal floating roofs control air emissions from the ethanol product tanks. Each tank also has a fire valve, a level gauge, and overfill protection. To provide process electricity and steam, Bushmills is authorized to operate 2 natural gas-fired...
combustion turbines with duct burners. Ethanol truck loading emissions are flared during standard operation. The 300-hp fire water pump engine is an emergency unit defined to operate less than 500 hours on a 12-month rolling sum basis. Ethanol rail cars only handle ethanol and denatured ethanol final product. Emissions from the three rail loading racks are not required to be controlled. Bushmills uses a flare to control emissions from truck loading operations. A total of two truck transfer areas currently exist.

This permit action also authorizes the following changes:
- Construction and operation of an additional gas turbine and natural gas-fired duct burner (EQUI 222-223, STRU 46), a 750,000 gallon final ethanol product tank (EQUI 221), three fermenters (EQUI 224-226) and degasser vessel (EQUI 227).
- Removal of DDGS Dryer C (EQUI 87) and Dryer D (EQUI 88), Boiler 1 (EQUI 91) and Boiler 2 (EQUI 92), and Temporary Boiler (EQUI 115).
- Lower existing turbine (EQUI 117) capacity to 65.5 MMBtu/hr and increase existing duct burner (EQUI 169) capacity to 180 MMBtu/hr.
- Changing routing of fermentation scrubber emissions to the atmosphere 100 percent of the time, instead of routing emissions in series from the RTO.
- Inclusion of a limit for chemical additives within the scrubbing liquid for additional emission control of HAPs, especially acetaldehyde.

<table>
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<tr>
<th>Pollutant</th>
<th>PM</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt;</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt;</th>
<th>SO&lt;sub&gt;2&lt;/sub&gt;</th>
<th>NO&lt;sub&gt;x&lt;/sub&gt;</th>
<th>VOC</th>
<th>CO</th>
<th>CO&lt;sub&gt;2e&lt;/sub&gt;</th>
<th>Total HAP</th>
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<tr>
<td>Limited Emissions Increase</td>
<td>-11.43</td>
<td>-12.91</td>
<td>-12.92</td>
<td>-36.64</td>
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<td>49.82</td>
<td>63.92</td>
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PM = Particulate Matter
PM<sub>10</sub> = PM, 10 microns and smaller
PM<sub>2.5</sub> = PM, 2.5 microns and smaller
NO<sub>x</sub> = Nitrogen Oxides
SO<sub>2</sub> = Sulfur Dioxide
VOC = Volatile Organic Compounds
CO = Carbon Monoxide
CO<sub>2e</sub> = Carbon Dioxide Equivalents as defined in Minn. R. 7007.0100
HAP = Hazardous Air Pollutant

The Permittee has submitted a pollution prevention progress report pursuant to Minn. Stat. § 115D.08.

The preliminary determination to issue this Air permit is tentative.

**Procedure for public participation**

As stated in Minn. R. chs. 7000 and 7001, there are three formal procedures for public participation in the MPCA's consideration of this matter. Interested persons may:

1. Submit written comments on the draft permit.
2. Petition the MPCA to hold a public informational meeting.
3. Petition the MPCA to hold a contested case hearing.

**Submitting written comments**

To submit comments or petitions to the MPCA through the mail or email, you must state:

1. Your interest in the permit application or the draft permit.
2. The action you wish the MPCA to take, including specific references to the section of the draft permit you believe should be changed.
3. The reasons supporting your position, stated with sufficient specificity as to allow the MPCA to investigate the merits of the position.

**Public informational meeting**

A public informational meeting is an informal meeting during which interested persons can ask questions concerning the proposed facility. MPCA staff will be present to provide information. If an interested person would like the MPCA to hold a public informational meeting, the person should include all information identified above and in addition include a statement of the reasons the person desires the MPCA to hold a public informational meeting and the issues that the person would like the agency to address at the public informational meeting.

**Contested Case Hearing**

A contested case hearing is a formal proceeding before an administrative law judge empowered to advise the MPCA regarding issues of fact. As described in Minn. R. 7000.1800, persons who submit petitions for a contested case hearing must also state the issues they propose to address in a contested case hearing, the specific relief requested or resolution of the matter, and the reasons (which may be in the form of proposed findings) supporting an MPCA decision to hold a contested case hearing. Failure to comply with these rules exactly may result in a denial of the request. To the extent known, the petitioner may also submit a list of prospective witnesses to be called at a hearing, a proposed list of publications, references, or studies to be introduced at a hearing and the approximate time required for the petitioner to present the matter at a hearing. The decision whether to hold a contested case hearing will be made under Minn. R. 7000.1900.