

**DEPARTMENT OF NATURAL RESOURCES**  
**ENVIRONMENTAL SERVICES DIVISION**  
**Field Office 3, Spencer**

**SITE SURVEY REPORT**

DATE: 02/27/19

TO: Suresh Kumar, WWES, WQB, ESD, DNR, Des Moines

FROM: Sheila Kenny

RE: Site Survey – POET Biorefining Emmetsburg (NPDES #7400102)

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**BACKGROUND**

POET Biorefining operates two adjacent ethanol production facilities near Emmetsburg, Iowa and currently has an NPDES permit for discharge of cooling tower blowdown, reverse osmosis reject water, and green sand filter backwash water. The Project Liberty facility produces cellulosic ethanol. Distillate from this process has been transported to Big Ox Energy for disposal thus far, but Big Ox will no longer be accepting this wastewater. Therefore, they now propose to dispose of the excess distillate by land application on the ground surrounding the ethanol plant.

The proposed application area is as follows:

Portions of the NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  and S  $\frac{1}{2}$  of Section 32, Freedom Township, T96N-R32W, Palo Alto County, encompassing approximately 160.1 ac.

**OBSERVATIONS**

On October 10, 2018, I met with Scott Anliker, Environmental Specialist from POET and Benjamin Klaus, consulting engineer from AECOM to conduct the site survey to determine if the proposed land application area meets all criteria required by Sections 21.1.1.2 and 21.2.1 of the Iowa Wastewater Facilities Design Standards. During the survey the following observations were made:

- The application area is not prone to flooding at a frequency greater than once every ten years.
- The wetted disposal area is at least 300 feet from public use areas.
- There is an existing abandoned residence located south of the plant on 390<sup>th</sup> Street. Mr. Anliker reported that POET owns this residence and intends to demolish it and return the ground to crop production. There are no other residences within 300 feet of the wetted disposal area.
- The exact proximity of the proposed application area to property lines could not be determined at the time of this site survey; however, Mr. Klaus updated the map of the application area to account for the 50 foot separation along the roadways.
- There is a drainage ditch that flows just east of this property. The initial map showed that the drainage ditch was less than 300 feet away from the northwest and southwest corners of the proposed application area. In addition, several surface tile intakes were observed within 300 feet of the proposed application area during this site survey. Therefore, the application area was reduced to account for the required 300 foot separation distance to the drainage ditch and all tile intakes. An updated map was submitted and it now appears that the proposed wetted disposal area is at least 300 feet from any continuous flowing stream or other physiographic feature that may provide direct connection to the ground water table.

- The wetted disposal area is at least 400 feet from any existing potable water supply well and at least 1000 feet from any shallow public water supply well. Documentation was submitted showing that the well that previously served the residence south of the plant was properly plugged in April 2018. All potable water for the plant is obtained from the City of Emmetsburg, but the application area map was updated to show the locations of the four production wells at the facility. All four wells are at least 400 feet away from the proposed land application area.
- The wetted disposal area is at least 500 feet from any public lake or impoundment and over ½ mile from any public lake or impoundment used as a source of raw water by a potable water supply.
- Perimeter signs shall be posted along roads and public use areas with a minimum of one sign on each side of the disposal area. The perimeter distance between signs shall not exceed 500 feet, and all signs shall clearly identify the nature of the facility and advise against trespassing in letters not less than 2 inches high.

### CONCLUSIONS & RECOMMENDATIONS

It is concluded that updated land application area (see the attached Figure 2-3) meets or exceeds all separation distances required by Sections 21.1.1.2 and 21.2.1 of the Iowa Wastewater Facilities Design Standards. Approval of this site for wastewater land application is recommended with the following condition:

- Proper perimeter signs must be posted.

INSPECTOR: Sheila Kenny



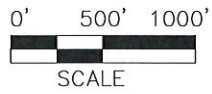
DATE: 02/27/19

REVIEWER: Tom Roos



DATE: 02/27/19

\$\$\$DATE\$\$\$



AERIAL SUMMER 2017

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OCT 17 2018

PREPARED BY:

IOWA DNR  
FIELD OFFICE 3

**AECOM**

FIGURE 2-3  
POTENTIAL  
LAND DISPOSAL AREAS

POET DSM ADVANCED BIOFUELS  
EMMETSBURG, IOWA

\$\$\$USERS\$\$\$  
\$\$\$PREP\$\$\$  
\$\$\$DGN\$\$\$