



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Big River Resources Boyceville, Boyceville, Wisconsin

FROM: Erin DuMontelle, Environmental Engineer
AECAB (MI/WI)

THRU: Sarah Marshall, Section Supervisor
AECAB (MI/WI)

TO: File

BASIC INFORMATION

Facility Name: Big River Resources Boyceville

Facility Location: N10185 370th St, Boyceville, Wisconsin 54725

Date of Inspection: April 19, 2023

EPA Inspector(s):

1. Erin DuMontelle, Environmental Engineer
2. Brittany Cobb, Environmental Engineer

Other Attendees:

1. Brian Kieffer, Plant Manager
2. Greg Tandberg, EHS Coordinator

Contact Email Address: Brian Kieffer – brian.kieffer@bigriverresources.com

Purpose of Inspection: Determine compliance with the Clean Air Act and their Title V Permit

Facility Type: Ethanol production

Regulations Central to Inspection: WI SIP and 40 CFR Part 60 Subpart A – General Provisions, 40 CFR Part 63 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels after 1984, 40 CFR Part 65 Subpart VVa – Standards of Performance Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

Arrival Time: 8:55 AM CDT

Departure Time: 11:39 AM CDT

Facility Name: Big River Resources Boyceville LLC
Facility Location: N10185 370th St, Boyceville, WI 54725
Date of Inspection: April 19, 2023

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Small Business Resource Information Sheet not provided. Reason: The company is not a small business.
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Brian Kieffer and Greg Tandberg unless otherwise noted.

Company Ownership: The company has not changed ownership in the last five years.

Process Description:

Big River Resources Boyceville (the facility or BRRB) makes fuel-grade ethanol. Corn is brought in by semi-truck and offloaded into one of two receiving bins. The facility can receive up to 250,000 bushels per day, but only consume approximately 60,000 bushels per day in the process. That corn is moved from the receiving bins to a hammermill where it is crushed and ground down to a flour-like consistency. Water, enzymes, and ammonia bisulfite (previously anhydrous ammonia) are added to the corn to break down the starch into simple sugars in a slurry tank. The mixture is sent from the slurry tank to one of the four the fermenter tanks on site. The mixture sits in these silos for approximately 2-3 days. The batch-processed slurry from the fermenter empties into the beer well where the process transitions to a continuous stream. The stream, a mash mixture, is sent to distillation where heat is added to separate the alcohol from the solids. There are three columns within the distillation process: the beer column, the rectification column, and the side stripper column.

Solids from the distillation process are sent to two natural-gas dryers where the mixture is dewatered to 10% moisture. These become the dry distillers' grains (DDGS) that are then stored onsite before being transported to local farmers as a cattle feed additive.

The alcohol that is removed is either sent to the tank farm for short term storage or passed through a molecular sieve to further pull off water to create a 200-proof ethanol. The 200-proof ethanol is stored at the tank farm until it is ready to be shipped off. Before shipping can occur, denaturant is added to the ethanol. The facility can ship out as many as eight rail cars of product during peak production season.

For air controls, there are 5 baghouses on site that are checked manually twice per shift. Each bag is changed out approximately every 2-3 years. There are two baghouses within receiving for the wet and dry corn silos. The third is at the hammermill when the corn is pulverized. The final two baghouses are for the DDGS process with the first capturing particulates when the DDGS come out of the dryer and move to storage and the second at the truck and semi loading station. There are scrubbers on each of the fermenters that have structured packing and flow is checked automatically. There are weekly pump checks and a daily scrubber log. The scrubbers are cleaned and calibrated during the biannual shutdown. The scrubbers all

Facility Name: Big River Resources Boyceville LLC
Facility Location: N10185 370th St, Boyceville, WI 54725
Date of Inspection: April 19, 2023

lead to the RTO. The RTO pulls a negative vacuum from the slurry tank to bring in emissions from the beginning of the fermentation process as well as being the destination for emissions created during the distillation process within the three columns. The RTO is kept at or above 1400° per stack tests that are completed every two years.

There is a flare on site that runs when trucks are loading out ethanol. The flare is not on the rail loadout. It runs normally between 1400-1500° and burns at 25 feet above ground level.

Staff Interview:

The facility started operations in 2006. The facility currently runs 24/7/365, and there are 36 employees at the location. This location is the smallest in size and production of four facilities within the Big River family.

BRRB can receive both wet and dry corn; the wet corn is called so by the moisture content and normally brought onsite during harvest season. The separation between dry and wet is important to the chemistry of the facility. There are vents to allow air flow within the bins; these vents are open only when the corn is not being transferred in or out of the bins.

The facility was also previously using anhydrous ammonia within the process. This tank has now been emptied and waiting to be purged before it is removed from the site.

The tank farm that is onsite contains six tanks: two floating roof tanks with process alcohol, two final product tanks, one denaturant tank and a final tank with corrosion inhibitor. There are internal checks every ten years and external checks every five years. Pipes from the tank are inspected every ten years by a 3rd party.

EPA also confirmed that the facility is under Part 68 of the CAA which requires the facility to have a Risk Management Plan. Surface level inquiries were made about different sections of their RMP.

- Operational Procedures: They can be found on a shared drive as well as in hard-copy form within the control room. Updates and revisions are completed at the same time as annual training. Specific operations for loading place the truck driver in charge, but there is procedure to always have a BRRB employee verifying points. There are emergency operations specifically written for the tank farm.
- Training: Annual training is performed for procedures. The workers are trained
- Management of Change: MOCs are used onsite most often during revisions of the operating procedures.
- Process Hazard Analysis: The last PHA was completed in 2021 and is completed on a five-year cycle. There has been active communication with the local fire department, and BRRB is on the Emergency Response Plan for the county.
- 5-year Incident History: There have been no incidents in the last five years.
- Audits: The previous PSM audit was completed in June of 2020 and there is another audit that was scheduled for after the inspection in 2023.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

At the time of inspection, it was raining, and the plant was shut down for bi-annual plant-wide maintenance. The facility had been shut down since April 16th, 2023. EPA toured the loading of

Facility Name: Big River Resources Boyceville LLC
Facility Location: N10185 370th St, Boyceville, WI 54725
Date of Inspection: April 19, 2023

corn into the receiving bins, the hammermill, as well as the tops of the four fermenter bins. The FLIR camera was used to canvas the tops of the fermenter tanks and no emissions were visible at the time. The rail load out was viewed where it was noted that there is no flare. The tank farm was examined and a nearby spill kit was opened and full.

Photos and/or Videos: were not taken during the inspection.

RECORDS REVIEW

1. Voluntary LDAR Report from October 2022 of the top of the fermenter tanks with a max value of 2814 and complete by David Polacheck
2. Flare height – 25 feet

CLOSING CONFERENCE

- ☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- A process flow diagram that shows each step of the process and includes the points of emissions and emissions controls
- Temperature Log for the RTO from January 1, 2019 – May 1, 2023
- All stack tests for emissions control equipment that have been completed at the site from January 1, 2019 – May 1, 2023
- The automatic log results from the scrubber from January 1, 2022 – December 31, 2022
- The daily scrubber log results from January 1, 2019 – May 1, 2023
- The SDS for the ammonia bisulfite
- The SDS for the denaturant
- All quarterly, semiannual, and annual LDAR reports from January 1, 2019 – May 1, 2023
- Map of the tank farm
- Reports from the external tank inspection in 2022

DIGITAL SIGNATURES

Report Author:  Digitally signed by ERIN DUMONTELLE
Date: 2023.06.16 11:17:52 -05'00'

Section Supervisor: **SARAH MARSHALL** Digitally signed by SARAH MARSHALL
Date: 2023.06.16 12:09:14 -05'00'