



REGION 5

CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Bunge North America (East), LLC, Decatur, IN

FROM: Matthew Walters, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Supervisor
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Bunge North America (East), LLC

Facility Location: 1200 North 2nd Street, Decatur, IN 46733

Date of Inspection: February 21, 2024

EPA Inspectors:

1. Matthew Walters, Environmental Engineer
2. Valaria Apolinario, Environmental Engineer

Other Attendees:

1. Adam Link, Safety, Health, Environmental Manager, Bunge North America
2. Zach Lengacher, Facility Manager, Bunge North America

Contact Email Address: adam.link@bunge.com, zach.lengacher@bunge.com

Purpose of Inspection: Grain handling and solvent extraction inspection

Facility Type: Soybean extraction plant

Regulations Central to Inspection: Grain Elevators NSPS at 40 C.F.R. Part 60, Subpart DD; Solvent Extraction for Vegetable Oil Production NESHAP at 40 C.F.R. Part 63, Subpart GGGG; and Federally Enforceable Title V Permit Conditions (Permit Number: 001-43019-00005)

Arrival Time: 8:35 a.m.

Departure Time: 12:00 p.m.

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

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

The following information was obtained verbally from facility personnel unless otherwise noted.

Process Description:

The primary raw material received by the facility is unprocessed soybeans. There are five truck dump stations and one rail dump station where soybeans are received into dump pits. Each dump pit has an aspiration system for dust control, and degummed soy oil is applied as a dust suppressant within the dump pits. The raw soybeans are then screened, dried, and transferred to dry bean storage. Aspiration is provided at various locations throughout the grain handling system.

Prior to solvent extraction, the facility processes the dry soybeans by cracking, dehulling, and flaking. The facility has two parallel solvent extractors that use n-hexane to extract oil from the flake. A 2-stage vacuum distillation process separates the oil/hexane mixture, with the oil stream going to a drying section and then on to the refinery and the hexane stream going to the solvent recovery system. The hexane stream is phase separated from water in the Sep tank, with the hexane phase overflowing to the Work tank. The facility removes residual hexane from the water phase in the Sewer Water Evaporator and discharges the wastewater to an open weir pit prior to the wastewater treatment process. A closed vent system routes hexane vapors from the fresh solvent storage tanks and the solvent recovery system to the mineral oil absorber to control hexane emissions.

The facility also receives wheat for storage and sale, but wheat is not processed at the facility.

Staff Interview:

- The facility maintains daily VE logs for each baghouse serving the aspiration systems.
- LEL monitors are located throughout hexane extraction facility, including an alarmed monitor on the mineral oil absorber vent stack.
- An analysis of the lean and rich mineral oil is performed on a monthly basis to monitor absorber operation.

- The incident that occurred on August 7, 2023 was the result of improper mixing of acetic anhydride and sodium hydroxide within a tank, resulting in an acid-base reaction. The plant was evacuated during the emergency response.

TOUR INFORMATION

EPA Toured the Facility: Yes

Data Collected and Observations:

- Prior to entering the site, Inspectors observed visible emissions from the top of the silos on the southwest side of the silo area. During the Facility tour, EPA also noted to Facility staff that there were visible emissions exiting from the top of another silo.
- Inspectors toured the truck dumping and soybean handling operations, and made the following observations:
 - Inspectors observed a soybean dump at Truck Dump #2, which the Title V Permit identifies as an affected facility under the Grain Elevators NSPS.
 - 40 C.F.R. § 60.302(c)(3) prohibits the discharge into the atmosphere of any fugitive emission from any truck loading station which exhibits greater than 10 percent opacity.
 - Inspectors did not observe significant fugitive emissions during the dump and therefore did not perform Method 9 or Alternative Method 082 for subsequent dumps.
 - Inspectors observed the #1 and #2 Scalperators, which the Title V Permit identifies as affected facilities under the Grain Elevators NSPS.
 - 40 C.F.R. § 60.302(c)(1) prohibits the discharge into the atmosphere of any fugitive emission from any grain handling operation which exhibits greater than 0 percent opacity.
 - Inspectors observed the scalperators to be fully enclosed and ducted to a dust collector, with no visible emissions present.
- Inspectors used a FLIR Gx320 Optical Gas Imaging camera to visualize emissions and made the following observations:
 - No emissions were visualized from the #1 or #2 Dryers.
 - No emissions were visualized from the Sep/Work tank or the two above ground storage tanks, which all contained hexane at the time of the inspection.
 - No emissions were visualized from the PRV on the underground storage tank, which is used as a hexane dump during shutdown.
 - No emissions were visualized from the process wastewater in the open weir pit.
 - Emissions were visualized from the mineral oil absorber exhaust.

- Emission requirements at 40 C.F.R. § 63.2840 specify that the compliance ratio (actual HAP loss/allowable HAP loss) must be less than or equal to 1.00 for each operating month.
 - Inspectors did not observe fugitive emissions from connections, valves, tanks, wastewater, etc. that may be indicative of excessive hexane loss. As noted above, Inspectors only visualized emissions with the FLIR at the mineral oil absorber exhaust, which is the expected emissions point for the soybean oil extraction process.
 - Inspectors requested compliance ratio calculations, including actual solvent loss calculations, for offsite review.

Photos and/or Videos: were taken during the inspection and are listed in Appendices A and B.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

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

Requested documents:

- Monthly hexane loss calculations and daily hexane inventory log covering 2/1/2023 through 1/31/2024
- Visible emissions logs for 1/1/24 to 2/21/24
- Most recent stack test reports for:
 - Megatex screener and scalperator baghouse
 - Hammermill plenum baghouse filter
 - Meal sizing and grinding operation
 - Hot dehulling equipment
- Plan for demonstrating compliance, as required by 40 CFR § 63.2850(a)(2)
- Investigation report from August 7, 2023 incident

Concerns: Inspectors shared video of the fugitive emissions observed from the silos prior to entering the site. The facility indicated that it investigated the emissions after the inspection and determined that the emissions were the result of wheat transfer. The facility indicated that all required dust controls were in operations at the time of transfer, but the wheat crop this year was particularly dusty.

DIGITAL SIGNATURES

Report Author: **MATTHEW WALTERS**



Digitally signed by MATTHEW WALTERS
Date: 2024.04.16 14:36:54 -05'00'

Facility Name: Bunge North America (East), LLC
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Section Supervisor: **BRIAN DICKENS**  Digitally signed by BRIAN DICKENS
Date: 2024.04.17 12:51:42 -05'00'

APPENDICES

- A. FLIR Image Log
- B. Digital Video Log

Facility Name: Bunge North America (East), LLC
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APPENDIX A: DIGITAL IMAGE LOG

Inspector Name: Valeria Apolinario **Archival Record Location:** *R5 Electronic Record Center/AECAB Library/Enf_Bunge Decatur_IN_24/Inspection_2024.02.21/Photos*

Image Number	File Name	Date and Time (EST)	Description of Image
1	FLIR0089.jpg	2/23/2024 10:45	See CBI Supplement
2	FLIR0090.jpg	2/23/2024 10:45	
3	FLIR0091.jpg	2/23/2024 10:45	

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APPENDIX B: DIGITAL VIDEO LOG

Inspector Name: Valeria Apolinario **Archival Record Location:** *R5 Electronic Record Center/AECAB Library/Enf_Bunge Decatur_IN_24/Inspection_2024.02.21/Videos*

Image Number	File Name	Date and Time (EST)	Description of Image
1	MVI_0530.MP4	2/23/2024 11:01	Visible emissions from silos
2	MVI_0531.MP4	2/23/2024 11:02	Visible emissions from silos
3	MVI_0532.MP4	2/23/2024 11:02	Visible emissions from silos