



United States Environmental Protection Agency
Region 7
Enforcement and Compliance Assurance Division

Air Branch

Air Branch Inspection Report
Unannounced Full Compliance Evaluation
E Energy Adams
13238 East Aspen Road
Adams, NE 68301
FRS# 110030484107

Inspection Date:
September 17, 2024

Jonathan Boyd, Inspector, ECAD, Air Branch

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Lance Avey, Air Branch Chief, ECAD

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and provides a clear indication of the end of this report.**

INSPECTION OVERVIEW

INSPECTION OBJECTIVE

The objective of the full compliance evaluation (FCE) inspection was to determine compliance of the facility with the Clean Air Act (CAA), specifically those requirements listed in **Table 1**.

Table 1 Applicable permit conditions, regulations, and standards

Table 1. APPLICABLE PERMIT CONDITIONS, REGULATIONS AND STANDARDS	
Code of Federal Regulation	Standard Name
40 CFR Part 60	Subpart A – General Provisions. Subpart Db – Standards of Performance for Industrial – Commercial – Institutional Steam Generating Units; Units Greater than 100 MMBtu/hr installed after 1984. Subpart Dc – Standards of Performance for Industrial – Commercial – Institutional Steam Generating Units; Units Greater than 10 MMBtu/hr but less than 100 MMBtu/hr after June 1989. Subpart Kb- Standards of Performance of Volatile Organic Liquid Storage Tanks. Subpart DD – Standards for Grain Elevators. Subpart VV – Standards of Performance for Equipment Leaks of VOC in Synthetic Organic Chemicals Manufacturing after 01/05/81 and on or before 11/07/06. Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
40 CFR Part 63	Subpart A – General Provisions Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines. Subpart CCCCCC – National Emission Standards for Hazardous Air Pollutants for Area Sources; Gasoline Dispensing Facilities.

Table 2 Inspection team members.

Table 2. INSPECTION TEAM MEMBERS		
Team Member	Organization	Project Role
Jonathan Boyd	EPA Region 7, ECAD, Air Branch	Lead inspector
Sean Bergin	EPA Region 7, ECAD, Air Branch	Inspector
Ambrosia Nissen	Nebraska Department of Environment and Energy (NDEE)	Inspector

FACILITY CONTACT INFORMATION

Table 3 Facility contact information.

Table 3. FACILITY CONTACT INFORMATION		
Name, Title	Phone No.	Email Address
Joe Oswalt, EHS Manager	402-988-2518	joswalt@eenergyadams.com
Eric Sturm, Air Reg Consulting (ARC), Lead Consultant	402-817-7887	eric@Airregconsulting.com

FACILITY OVERVIEW

E Energy Adams (EEA) is an ethanol plant located northwest of Adams, NE, in Gage County. EEA began operations on October 27, 2007, and produces 105 million gallons/year of denatured ethanol along with modified wet and dry distiller's grain and solubles (DDGS) which are sold to local and regional markets. EEA and operates 24 hours a day, 365 days a year and currently employs 70 people.

The last onsite compliance monitoring activity at the facility was a FCE inspection conducted by NDEE on April 24, 2023. No violations or concerns were found at the time of the inspection.

EPA's Enforcement and Compliance History Online website shows that EEA has been listed as in violation for volatile organic compound (VOC) emissions since December 8, 2021. NDEE files show that EEA was returned to compliance on March 7, 2021, after corrective actions were taken.

According to EEA's Title V operating permit (OP23R1-026) issued by NDEE on January 1, 2024, the facility is subject to the regulations and standards subject to review during the inspection as noted in **Table 1**.

FACILITY OPERATIONS SUMMARY

EEA is an ethanol manufacturing plant. Corn is received by truck and stored in storage bins for use in the dry mill plant. Once the grain is ground into a coarse flour in the hammer mill, it is mixed into slurry with water and anhydrous ammonia (for pH adjustment and nutrient supply), fermented, and then distilled. After passing through distillation columns, the ethanol concentration is approximately 190-proof. Then it proceeds through a molecular sieve, which increases the ethanol concentration to 200-proof. A denaturant (gasoline) is added before the ethanol is shipped to customers. Grain receiving and processing are controlled by baghouses. Fermentation and distillation are controlled by the thermal oxidizer (TO), regenerative thermal oxidizer (RTO), and a scrubber. A Continuous Emission Monitoring System (CEMS) is used at the scrubber for nitrogen oxides (NO_x), sulfur dioxide (SO₂), and carbon monoxide emission monitoring. Ethanol loadout when truck loading is occurring is controlled by submerged loading and a flare. Ethanol loadout by railcar has no required emissions control. The facility utilizes AP-42 factor and adds railcar loadout emissions to their facility-wide emissions calculations.

FIELD ACTIVITIES SUMMARY

Mr. Bergin and I arrived at the facility on September 17, 2024, at 8:00 a.m. and completed a visual surveillance inspection as we approached the facility. We did not observe any visible

emissions or unusual activity at the time. We met the NDEE representative, Ms. Nissen, in the parking lot of the facility. We made entry at the Administration Building at 8:05 a.m. and I introduced myself and members of the inspection team. We were instructed to drive to the Plant Administration Building and meet Mr. Oswald, the Environmental Health and Safety Manager, in the conference room there. Mr. Oswald arrived in the conference room at 8:19 a.m., at which time I presented my credentials, and provided my business card to Mr. Oswald. We moved to Mr. Oswald's office per his request. We were told we did not need to go through a facility safety briefing provided we wear appropriate personal protection equipment and because we would remain with Mr. Oswald when touring the facility. I conducted an opening conference during which I explained that the purpose of the visit was to conduct an inspection to determine compliance with the CAA, specifically, to determine compliance with the regulations and standards listed in **Table 1**. I explained that after asking for some general business information, I would observe work practices, process units, emission units, control equipment, and review associated records demonstrating compliance with the permits and regulations. I explained to Mr. Oswald that the facility would have an opportunity to make a claim of business confidentiality at the end of the inspection. Mr. Oswald did not make a claim of confidentiality at that time but said he would need to contact the Plant Manager to confirm. After communication with the Plant Manager, Mr. Oswald did not make a claim of confidentiality.

After the opening conference I began going through the facility's permit requirements and asking questions pertaining to their requirements. At 9:45 a.m., Mr. Sturm (ARC) arrived and joined the conversation. I provided Mr. Oswald with an initial list of requested documents.

I requested a schematic diagram of the facility, and Mr. Oswald described the facility layout and the facility's process. At 12:00 p.m. we broke for lunch.

Upon returning from lunch at 1:30 p.m. the inspection team was given a facility tour by Mr. Oswald and accompanied by Mr. Sturm. We were asked to wear steel toe boots, hard hats, and safety glasses due to the facility's safety protocols. Mr. Oswald was informed Mr. Bergin would be using an intrinsically safe FLIR camera, and I would be using an intrinsically safe camera for photos while we were on our facility tour.

Following the facility tour we met to further discuss the permit requirements. I told Mr. Oswald that after the inspection I would email him a secure link for the documents requested during the inspection.

I conducted a closing conference with Mr. Oswald and Mr. Sturm at 3:30 p.m. I provided Mr. Oswald with copies of the Receipt for Documents (**Appendix A**) and the Confidential Business Information (**Appendix B**) forms. Mr. Oswald did not make a claim of confidentiality. Mr. Oswald

and I agreed to a deadline of September 27, 2024, for additional records that I requested to review. I sent Mr. Oswalt a OneDrive shared folder at 5:00 p.m. on September 17, 2024. All of the requested documents were received prior to the deadline date. I did not issue a Notice of Potential Findings. We departed the facility at 4:00 p.m.

Observations and potential findings from the facility tour, records review, and measurement activities are noted in the **Investigation Observation and Potential Findings** section below.

Measurement Activities

Mr. Bergin used a FLIR camera to observe the rail car loading area, tanks subject to 40 CFR 60 Subpart Kb, thermal oxidizer, scrubber, and fermentation tanks. All environmental measurement activities were performed in accordance with the EPA Region 7 quality system. Mr. Bergin followed manufacturer and EPA processes for instrument calibration.

Table 4 Field measurement activities.

Table 1. FIELD MEASUREMENT ACTIVITIES			
Location Identifier	Date(s) and Time	Method and/or Procedure ¹ , and Equipment	Measurer Name
Facility Emission Points and Tank Area	9.17.2024 1330-1515 hrs.	Region 7 procedure: <i>FLIR GX320 Infrared Cameras</i> Equipment: <i>Teledyne, GX320, Serial No. 10400138</i>	Bergin
¹ The current version of each procedure, at the time of the investigation, was followed.			

INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions, and field activities were documented in the field records. All photographs are attached as **Appendix C**. I discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. The EPA Region 7 Air Branch case review team will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

A schematic diagram of the facility can be found in Appendix D.

Specific Conditions for Grain Receiving, Handling, Drying, Storing, and Milling Operations

Performance testing for PM₁₀ is required for the grain unloading, grain receiving, and milling baghouses no longer than 37 months from the last valid performance test. The test will be conducted concurrently with testing on the thermal oxidizer, DDGS cooler and DDGS baghouse.

Mr. Oswalt told me that the performance testing has been conducted. No issues were found during the most recent test.

Each baghouse must be equipped with an operational pressure differential indicator. Pressure drop readings must be recorded at least once per day when the baghouses are in operation. Mr. Oswalt said that pressure readings are conducted daily. Each day of operation an employee will complete an Environmental Daily Observations sheet (See the inspection folder for an example) which contains the permitted daily operational parameter observation requirements for the facility, including pressure drops, daily visible emissions surveys, date, and time of observation.

Observations of the grain dryer will be conducted daily to determine whether there are visible emissions, leaks, or other indications that may necessitate corrective action. The grain dryer (FDR-4700) will not operate more than 2,500 hours per any period of twelve (12) consecutive calendar months and must be equipped with a non-resettable hour meter to record the operating hours.

Grain dryer daily observations are noted on the Environmental Daily Observations sheet. The grain dryer is equipped with a non-resettable hour meter. Hour meter readings are read and recorded daily. Mr. Oswalt said that the grain dryer has not operated more than 2,500 hours per 12-month period.

EEA is required to inspect and maintain records for each baghouse. Maintenance is conducted according to manufacturers' recommendations. Facility-wide records are maintained on the facility maintenance system. Records include all routine maintenance and preventive actions performed with a description of the maintenance conducted as well as records of equipment failures, malfunctions, or other variations, including time of occurrence, actions taken, and when corrections were made. Mr. Oswalt showed me example work orders and maintenance conducted during the inspection.

Specific Conditions for Fermentation Operations

All emissions from the fermenters and beer well are controlled by the CO₂ scrubber. EEA demonstrates compliance with the permitted emission limits with a continuous emissions monitoring system (CEMS).

Daily required observations are maintained on the Environmental Daily Observations sheet. Documentation of maintenance is maintained on the facility-wide maintenance software. EEA is required to track hourly, daily, and monthly acetaldehyde emissions as well as volatile organic compound (VOC) emissions.

Acetaldehyde and VOC emissions are calculated using CEMS data. Records are kept onsite for a minimum of 5 years. EEA submits an Annual Acetaldehyde Report to NDEE by March 31 each year. VOC and hazardous air pollutant (HAP) emissions are reported by July 1 each year to NDEE (emissions inventory).

Specific Conditions for the Thermal Oxidizer/Waste Heat Recovery Boiler System (TO/WHRB)

EEA maintains records of fuel receipts from the natural gas supplier as required. Natural gas usage is recorded, and monthly totals are maintained. Documentation of the hourly temperature readings of the TO/WHRB system (C-10/8-10) while associated emission units are in operation are maintained as required.

Daily routine observations are maintained on the Environmental Daily Observations sheet. Routine maintenance and malfunctions of equipment are maintained on the facility-wide maintenance database.

Performance testing of the TO/WHRB is required and must be conducted concurrently with VOC testing and acetaldehyde testing. This permit requirement is covered because the CO2 scrubber (S-40) has a CEMS.

Specific Conditions for Ethanol Loadout and Receiving

Submerged loading is required when transferring liquid product from the storage tank to a truck or railcar. Mr. Oswalt confirmed that submerged loading is conducted. A closed vapor recovery system is used for truck loadout. I did not observe truck loadout at the time of the inspection. Maintenance of the vapor recovery system is conducted, and the records maintained on the facility-wide maintenance system.

A vapor recovery system is not used for rail loadout. Mr. Strum said that emissions from rail loading are calculated and reported.

Specific Conditions for DOGS Cooling, Storage, and Loadout

Performance testing is required for the cyclone/baghouse system (C-70) and the loadout baghouse (C-90). The testing should be concurrent with the performance testing of the receiving, milling and handling baghouses. Mr. Oswald confirmed that the testing is conducted.

Each baghouse will be maintained according to manufacturer's requirements and be equipped with a pressure differential indicator. Baghouse pressure readings will occur at least once daily as well as daily visible emissions observations. The daily pressure drop readings and visual emissions observations are conducted and documented on the Environmental Daily Observations sheet. The Environmental Daily Observations sheets were reviewed at the time of the inspection. Documentation of routine maintenance and non-routine maintenance is maintained on the facility-wide maintenance system.

Specific Conditions for Emergency Equipment

The emergency fire water-pump engine is equipped with a non-resettable hour meter to record the operating hours. The emergency fire water-pump engine shall not exceed 500 operating hours per any period twelve (12) consecutive calendar months. Maintenance checks and readiness testing for the emergency fire water-pump engine shall not exceed 100 operating hours per any period of twelve (12) consecutive calendar months. Diesel sulfur content cannot be greater than 15 ppm by weight.

The emergency engine is equipped with a non-resettable hour meter, I observed the meter at the time of the inspection. Engine hours are documented daily on the Environmental Daily Observations sheet as well as required visible emissions surveys. Mr. Oswald said that the emergency engine hours have not exceeded 500 hours in a 12-month period or 100 hours of maintenance operation hours in a 12-month period. I reviewed a diesel receipt at the time of the inspection and the sulfur content of the diesel is less than 15 ppm by weight.

Specific Conditions for Storage Tanks

EEA has two storage tanks (T-61 and T-62) that are subject to the requirements of 40 CFR 60 subpart Kb. Mr. Oswald told me that the tanks are inspected through the hatch annually and full tank inspections (API 653) are conducted every 10 years. The most recent API 653 inspection is an external report conducted on November 21, 2021, can be found in the inspection folder.

Mr. Bergin observed tanks T-61 and T-62 with a FLIR camera at the time of the inspection. No emissions were observed with the camera in regular infrared mode.

Specific Conditions for Fugitive Emissions from Equipment Leaks

EEA uses an outside contractor to conduct the required leak detection and repair (LDAR) monitoring. LDAR reports are submitted to NDEE semi-annually. Mr. Oswald told me that they fix leaks when they are identified and do not wait until a leak has met the leak definition before fixing it, possibly a reason why EEA reports very few leaks in their LDAR reports.

End of report.