

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection**

B857027171

FACILITY: THE ANDERSONS ALBION ETHANOL, LLC		SRN / ID: B8570
LOCATION: 26250 B DR N, SHERIDAN TWP		DISTRICT: Kalamazoo
CITY: SHERIDAN TWP		COUNTY: CALHOUN
CONTACT: Ron Zibbell, Compliance & Safety Administrator		ACTIVITY DATE: 09/18/2014
STAFF: Dale Turton	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

An inspection was conducted of the grain receiving and ethanol production facility. Permit to install #120-05H covers the entire operation. This is a Title V major source that does not yet have an approved Renewable Operating Permit (ROP). The ROP is currently in the draft stage. This inspection was conducted using 120-05H as the active compliance document.

Ron Zibbell (Safety & Compliance Administrator), Catherine Woodliff, Doug Deland, and Harlan were present during the inspection.

FGELEVATOR

This consists of the following emission units: GRAINDRY, GRAINRECEIVE, GRAINSHIPPED, and GRAINSTORED. The elevator is a corn only facility. Since this is a dedicated part of the ethanol plant, it is the only grain used. The elevator receives some corn year round but harvest season is busiest.

The two grain dryers at the facility are used most heavily during the fall and early winter when grain is being harvested and when corn needs to be dried. They are generally not used during the summer. There was not one being operated during the visit. The perforations on the dryer screed appear to comply with the 0.094 inch size limit. The natural gas usage is being recorded. The highest 12- month rolling period was 39 million cubic feet of gas used, which is less than the permit limit of 100 million.

There was no truck unloading corn into the receiving pit during the inspection. The harvest season is delayed this year due to wet weather and late ripening corn. The permit requires that the two truck unloading enclosures be equipped with a barrier to prevent dust from being carried out of the area. There are barriers on one end of the truck pit enclosures. All delivery trucks now are the hopper bottom style that dumps directly into the grate. There is a vacuum system beneath the grate that pulls into a pulse jet baghouse (C-200). This prevents any dust from billowing out of the grates. The differential pressure gauge is in place to measure the pressure drop across the filter.

The area surrounding the elevator was being kept clean from dust and bees wings. This doesn't appear to be a problem. The fugitive dust plan for the area is being implemented and maintained. The area is being swept free of any buildup of material. No dust suppressant liquids are used.

Records are being kept of the required monthly visible emission readings on the grain receiving and grain dryer operation. Records are also being kept of the bushels of grain received, handled, and the grain dried. There was no shipping during the last year. Everything received was used at the plant. There were 4.2 million bushels dried for the 12-month rolling period, vs. the limit of 8 million.

EU-CYCLONE

This equipment is a transfer cyclone and baghouse all in one housing. The collected Dried Distillers Grain (DDG) is transferred to the adjacent storage building for loadout.

The differential pressure gauge for the baghouse was reading 0.2 inches of H₂O. There were no visible emissions observed. Records are being kept of the required monthly visible emission readings on the baghouse.

The hours of operation are being kept, which is the total time in a year minus the downtime for the plant.

EU-LOADOUT

This equipment is used to load and ship the DDG out by railcar or by semi-truck. From inside the adjacent enclosed building, a loader pushes or drops the accumulated DDG into the grate and onto the conveyor. The conveyor and elevator transport the product up to the weigh hopper before it is moved over to and dropped into the truck or car. Only one truck or a rail car can be loaded at any given time, not both at the same time.

A pulse jet baghouse controls the dust from this process. There are dust pickup points at the discharge chutes, eliminating the need to close off the loadout enclosure. The differential pressure across the baghouse during the inspection was 1.5 inches of H₂O.

There were no visible emissions observed. Records are being kept of the required monthly visible emission readings on the baghouse.

A new baghouse is being constructed to control the emissions from the truck loading, which will leave the existing baghouse controlling the rail loadout only.

EU-COOLINGTWR

It is being maintained and operated properly.

EU-DIESELPUMP

This is subject to both the NSPS for stationary compression ignition internal combustion engines (subpart 60 IIII), and the standards for stationary RICEs (subpart 63 ZZZZ). The generator is being checked every week.

The hours are being recorded from the no-resettable hours meter. The oil and filter were just changed this month.

The stack is horizontally discharged.

There are using ultra low sulfur fuel with a maximum of 15 ppm S.

EU-WDGS

Records indicate that they load out no more than 900 tons per day, and have a capacity less than the 160,000 cubic ft storage allowed.

EU-NH3STGTANK

This tank has been decommissioned. It is still in place but can't currently be used. They are keeping it in the permit in case they ever want to use it again.

FGCORNHAND

This consists of the following emission units: TRUCKPIT, RECEIVINGCONV, CORNELEV1

This receiving area is long enough to drive the truck inside and close one or both doors. They only use hopper bottom dumping into the grate. At the time of the inspection, a truck was observed unloading into the truck pit. It was a calm day, the doors were open and there were no VE's observed being emitted from the enclosure. The company is performing and keeping records of the monthly visible emission readings as required by the permit.

The grate, and other related conveyors, screens etc. are controlled by a pulse jet baghouse C-20. The baghouse was being operated properly and the differential pressure gauge was being maintained. The differential pressure was reading 2.1 inches of water during the inspection. There were no visible emissions observed from the baghouse during the inspection. The bags are typically replaced during the twice yearly shutdown.

FGCORNBINS

This consists of the following emission units: Corn Bin1&2, and the Day Bin.

There were no visible emissions observed. Records are being kept of the required monthly visible emission readings from the bins.

FGMILL

This consists of the following emission units: four mills, conveyors, screens, and elevator.

The emissions are controlled by a pulse jet baghouse. The baghouse was being operated properly and the differential pressure gauge was being maintained. The differential pressure was reading 0.8 inches of water during the inspection. The bags are typically replaced during the twice yearly shutdown.

There were no visible emissions observed. Records are being kept of the required monthly visible emission readings on the grain milling operation.

FGFERM

This consists of the following emission units: FERMENTER1, 2, 3, 4, &5, and BEERWELL. The emissions are controlled by a packed bed scrubber (Fermentation Scrubber).

There are five batch fermentation vessels in total. At any given time, there are usually 4 vessels working. The fifth vessel is usually being filled, being emptied, or being cleaned. The process is steady and remains about the same at all times. Four fermenters are almost always being vented. The vessel being cleaned is closed off from venting. During the first 2-3 hours of a vessel filling stage the emissions from that one vessel is diverted to the purge scrubber before switching to the fermentation scrubber.

The one beer well tank always has material in it, preferably more than 40% full. This is continuously being drained off and is intermittently being filled from one of the fermentation vessel.

The company is monitoring and recording the scrubbing liquid flow rate and the differential pressure across the scrubber. Neither of these reading is available outside at he scrubber. This data appears on the computer screen in the control room and inside the building next to the fermenters.

The exit gas from this scrubber is about 99% CO₂. It is sent over to Continental Carbonic for them to make solid carbon dioxide (dry ice). It is only rarely that they don't send the gases over to Continental, but they do keep records of the duration if it happens.

The company is tracking and recording the ethanol production. The highest 3-month rolling average production has been 18 million gallons. The emissions will need to be retested if they reach 19 million gallons for a 3 month rolling average period.

FGPURGE

This consists of the following emission units: FERMENTER1, 2, 3, 4, &5. The emissions are controlled by a packed bed scrubber.

This scrubber is only used during the first 2-3 hours or so at the beginning of filling an empty fermentation vessel. There is too much oxygen in the head space of the tank to allow for it to be sent over to Continental Carbonic, so it can't go in the fermentation scrubber.

The company has records of each time a fermentation vessel is filled, thus when the purge scrubber is utilized. There is a meter that records the time the purge scrubber valves are open.

FGMETH

This consists of the following emission units: METHANATOR1&2. A flare controls the VOC emissions only when the dryers are off line.

The emissions were being directed to the dryer as required by the permit. Emissions sent to the dryer eventually tie into the thermal oxidizer. It is very rare that the gases will not go to the dryer and instead go to the flare. They have not vented to the atmosphere.

FGOXID

This consists of the following emission units: RECTIFIER, SIDESTRIPPER, BEERCOLUMN, YEASTTANK, DRYER1&2, TO&WHRB, CENTRIFUGE1, 2, 3, & 4, 190PROOFCONDENSER, and 200PROOFCONDENSER. The emissions are controlled by a thermal oxidizer, followed by a heat recovery steam generator (HRSG).

The thermal oxidizer controls the off gases from the 2 dried distillers grain (DDG) dryers, the 4 centrifuges, both ethanol condensers, the yeast tank, the mixer, and 2 slurry tanks.

The HRSG is subject to 40 CFR 60 Subpart Db (NSPS for boilers). The CEMS was reading 44.9 ppm NO_x and 2.8% Oxygen. The thermal oxidizer was being operated at 1586 degrees F. The permit requires a minimum temperature of 1475 degrees F, which is 50 deg less than the temperature the oxidizer was last tested and passed at.

Records are being kept of the natural gas being burned in the TOX. The highest month of gas usage during the past year was about 8.1 million SCFM. They are burning pipeline quality gas.

There were not any visible emissions, other than the steam plume, from the stack discharge. Records are being kept of the required monthly visible emission readings.

Emission calculations and records are compiled and reported from the Maumee, Ohio headquarters.

At this point, until the ROP is issued, they are up to date on the required stack testing.

FGLOADOUT

This consists of the following emission units: LOADOUT-TRK (truck), LOADOUT-RL (rail). The VOC emissions are controlled by a flare.

Records indicate the amount of denatured alcohol throughput was a maximum of 78 million gallons per rolling 12-month period, which is less than the permit limit of 90 million gallons.

Records indicate the amount of denaturant throughput was a maximum of 3.2 million gallons per rolling 12-month period, which is less than the permit limit of 5.75 million gallons.

The flare is on an interlock system. Trucks or railcars can't begin loading product without the flare operating. The flare has an electronic ignition and is fired on natural gas. This was observed in operation. The flare was operating at about 1050 deg F during the inspection. Records show that this temperature can briefly go up considerably if a tanker truck has pure gasoline vapors in it. There were no VE's due to the flare.

FGNSPSTANKS

This consists of the following emission units: 190PROOF, 200PROOF, DENATURANT, DENATTANK1&2.

The tanks are subject to 40 CFR 60 Subpart Kb (NSPS for tanks). The tanks are outfitted with internal floating roofs as required in the permit. It was verified in a previous visit that the floating roofs are in place. They can be seen through a hatch opening on the roof of the tanks.

The company last performed their required inspections in August.

FGNSPSVV

The facility is subject to the NSPS Subpart VV. This requires a leak detection and repair (LDAR) program for the pumps, valves, flanges, etc. in liquid and vapor service.

The company had submitted the LDAR program in July 2007. The program describes the people involved in implementing the plan, the equipment and methods for monitoring, the frequency of monitoring, and the plan they will follow if leaks are detected.

We have been receiving the semi-annual reports that describe the monthly leaks that were discovered and their response for repair.

Currently the valves, flanges, and pumps are monitored with the FID/PID analyzer on the monthly or quarterly schedule as required. Daily visual checks are done to look for dripping liquid.

FGFACILITY

This group limits the plant-wide emissions of NOx, VOC, CO, HAPs, CO2e, PM, PM10, and PM2.5, and requires the malfunction abatement plan, odor management plan, emergency response plan, and compliance with the grain elevator NSPS..

The MAERS report shows that the 12-month (2013) emission limits were:

NOx – 70 tons
VOC – 29 tons
CO – 6 tons
PM10 – 6 tons

The Malfunction Abatement Plan and the Odor Management Plan has been submitted and they are being followed.

A sign with the emergency phone numbers and warning against unauthorized entry is posted at the facility entrance.

Plant-Wide Baghouses

The differential pressure gauges (magnehelics) all have a scale of (-15 to +15 inches) water. Since all of the fans for the baghouses controlling the elevator grain receiving, corn handling truck pit, milling, DDG cyclone, and the DDG loadout are inducing draft on the baghouses, they will always be negative pressure during operation. Staff observed that a 0-15 scale magnehelic could be installed on all of these filters to double the sensitivity of the gauge and simply just measure the absolute pressure differential across the bags.

NAME

Dale Twiston

DATE

9/25/2014

SUPERVISOR

NO 9/25/2014