

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N779958081

FACILITY: BORDINE NURSERY		SRN / ID: N7799
LOCATION: 9100 TORREY RD, GRAND BLANC		DISTRICT: Lansing
CITY: GRAND BLANC		COUNTY: GENESEE
CONTACT: Brian Parker , Vice President		ACTIVITY DATE: 05/14/2021
STAFF: Daniel McGeen	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection of facility most recently inspected by AQD in 2013.		
RESOLVED COMPLAINTS:		

On 5/14/20201, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) conducted a scheduled inspection of Bordine Nursery's wood-fired boiler. This facility was last inspected by AQD in 2013.

Environmental contact:

Brian Parker, Vice President; 248-651-9000, ext. 1150; brian@bordine.com

Also, brian@bordines.com is a valid email address

Mike Hric, Sr., Construction & Maintenance; mikeh@bordines.com

Facility description:

Bordine Nursery operates a wood-fired boiler which is used to generate steam to warm their greenhouses during the colder months of the year.

Emission units*:

Wood-fired boiler with multi-cyclone or multiclone collector, rated at 12.8 million Btu/hr per PTI 146-07B (actual size of the unit may be closer to 10.2 million Btu/hr, based upon experience)

* An *emission unit* is any part of a stationary source which emits or has the potential to emit an air contaminant.

Regulatory overview:

This facility is classified as a true minor source for *criteria air pollutants*; that is, those pollutants for which a National Ambient Air Quality Standard (NAAQS) exists. These include carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds, lead, particulate matter smaller than 10 microns (PM-10) and particulate matter smaller than 2.5 microns (PM2.5). A *major source* has the potential to emit (PTE) of 100 tons per year (TPY) of one or more criteria pollutants.

This facility is considered a minor source or *area source* of hazardous air pollutants (HAPs). A major source of HAPS has the PTE of 10 TPY or more of a single HAP, or 25 TPY or more of combined HAPs.

This facility is not subject to any federal New Source Performance Standards (NSPS) or Maximum Achievable Control Technology (MACT) standards.

Fee status:

This facility is not considered fee-subject, because it is not a major source for either criteria pollutants or hazardous air pollutants, nor is it subject to any NSPS or MACT standards. It is not required to report emissions annually via the Michigan Air Emission Reporting System (MAERS).

Location:

This boiler is located at a large commercial greenhouse and nursery for plants and trees. To the immediate west is US-23, and beyond that are farm fields. To the east northeast appear to be a couple residences or possibly businesses being operated out of residences, about 450 feet away, as

measured by me in Google Maps. To the north are a few small businesses. To the east are fields. To the south are several residences, with the closet one being about 1,900 feet from the boiler, as measured in Google Maps.

History:

This facility was last inspected by AQD on 1/15/2013. Prior to that, it was inspected in 2009 and 2008 before that. No instances of noncompliance were identified. The boiler was installed in 2008, I have been informed. There are no instances of complaints having been received by AQD regarding this facility in AQD's current database, which dates back to 2007.

Safety apparel:

It is not known to me what onsite requirements are for safety apparel, but I brought ear plugs, and wore safety glasses with side shields, a hard hat, steel-toed boots, a high visibility safety vest, and a disposable paper mask to protect against the possible transmission of the coronavirus.

Arrival:

This was not an unannounced inspection, because AQD guidance to field staff at this point during the COVID-19 pandemic, prior to 7/12/2021, was to prearrange inspections. The intent of this requirement was so a site-specific plan could be developed to allow staff to inspect a facility without risk of spreading the coronavirus.

I therefore called Mr. Brian Parker, Vice President, on 5/11/2021. I asked if the boiler would still be running by Friday, 5/14, or if it would be so warm that the boiler would be done for the season, by then. Mr. Parker indicated that it might still be running on 5/14, and to give him a call after 6:00 AM that morning.

At 6:10 AM on 5/14 I called Mr. Parker, and he verified that the boiler was still running this morning, as the nights have still been cool enough. I left for the field at this time.

I arrived at the site at 7:40 AM, and called Mr. Parker from the parking lot. He advised me to drive to the north end of the site, on W. Cook Road, and that Mike would meet me there, by the building where the boiler is located. I did as instructed. Upon parking by the boiler building, I noted that there were no visible emissions from the boiler exhaust stack. Weather conditions were sunny and clear and 53 degrees F, with winds out of the southwest at 0-5 miles per hour. No odors were detected.

I met with Mr. Mike Hric, Sr., Construction & Maintenance. He accompanied me during the inspection.

Overview of operation practices

As summarized by AQD's Brad Myott in 2013, Bordine Nursery has a detailed Wood Waste Procurement and Monitoring Plan (the 'Plan') which was submitted to AQD on 10-1-07. This plan describes the procedures followed, types of waste accepted from suppliers of fuel materials, and personnel procedures for accepting fuel materials, and charging and operation of the boiler. Their permit requires that they burn only virgin (i.e. non-treated) wood waste and the Plan helps assure that they meet this requirement.

Various fuel materials are identified in the Plan. Bordine used to receive most of their material from Mid-Michigan Recycling (MMR). Currently, however, most of their fuel consists of clean wood wastes such as tree trimmings, pallet chips, and similar materials.

The Plan allows for the use of two types of wood waste. Source separated wood (SSW) and commingled wood debris (CWD). SSW is typically wood scrap and wood waste in the form of used pallets, packing crates, dunnage, and wood fiber material and includes tree trimmings. CWD is generated by a wide variety of construction and demolition activities and must go through a wood waste recycling facility (WWRF) prior to acceptance which is explained in the Plan. Currently Bordine is only using SSW that they receive from local companies in the area. This is primarily wood shipping and packing materials and tree trimmings.

Bordine Nursery typically maintains at least a few day supply of available wood fuel on-site. They unit fires approximately 120 yds/day in high fire mode. The wood fired boiler operates from October through May with some assistance from the NG fired boilers in February and March. The permit allows for a usage of 6,000 hours of operation on a 12-month rolling basis. Because the unit only operates from October 1 through May 31, the maximum amount of hours it could run is 5,856, therefore the 6,000 hour limit is met.

Inspection:

I noted that there were no visible emissions from the boiler stack upon my arrival, nor at any other time during the inspection. The top of the exhaust stack was free of soiling or soot deposits.

The boiler heats water in a silo which is used to heat greenhouses during cold weather, and runs 24 hours per day, 7 days/week. Mr. Hric explained that once nighttime temperatures in the spring reach 55 degrees F, they don't need any more heat from the boiler to keep the greenhouses warm. They typically do not need the boiler from mid-May through mid-October, as I understand it.

I was told that they typically can feed in 100 cubic yards per day of clean wood waste, and burn about 20,000 lbs of wood/year. I was told that they do not use any natural gas as a supplemental fuel.

The boiler and room housing it appeared clean and neat. The boiler control room had a control panel, from which I wrote down the following data:

- Flame rate: 100%
- Stack temperature: 366 degrees F exit
- oxygen: 10.5%
- Furnace temperature: 726 degrees F
- Fuel conveyor: 100%
- Chain conveyor: 100%
- Multicyclone: 100 Pascals
- Furnace pressure: 175-231 Pascals

I was informed that there are 3 zones in the boiler, and that screws push the wood fuel into the boiler, and 3 blowers push the wood along. Data on the 3 zones was as follows:

- Zone 1: 64%
- Zone 2: 49%
- Zone 3: 17%

I was informed that there is 2% ash from the boiler. The ash goes into a "cold bath" of water, I was told, while the multi-cyclone dumps its ash in the conveyor. I observed ash being stored in the ash trailer. It was explained that they fill up the ash trailer about every 3 days. I saw a small outdoor ash pile. There were no emissions of fugitive dust from the pile, at this time.

PTI 146-07B Special Condition (SC) EUWOODBLR II. 1 says the permittee shall only burn virgin (i.e., non-treated) wood waste in EUBOILER. They appeared to be in compliance with this. I was shown the raw material or fuel pile. There were pallets, wood from tree trimmings and from crates.

Mr. Hric explained that they pick up any pieces of plastic or metal before they bulldoze the wood waste. It is my understanding that they use a wood chipper to grind the wood waste into a small enough size to feed the boiler. This unit is also shown in photo 001. It can be considered exempt from needing an air use permit under Michigan Air Pollution Control Rule 285(2)(gg) as long as it only processes wood or wood residues which are not demolition waste materials.

I did not see any painted or treated wood. The overall wood pile is shown in photo 002, with the ash pile to the far left.

Mr. Hric indicated that there was a year's worth of wood fuel, here. They close their gates to the wood drop off area when they have enough fuel, I was told, plus they keep the gates closed June to November, to avoid receiving too much fuel.

I was shown the bay where fuel is deposited, and rams push the wood chips into the boiler feed system. Mr. Hric pointed out a disc which removes oversized materials, as they only want to burn material 3 inches in size or less.

SC EUWOODBLLR III. 2. prohibits the company from operating more than 6,000 hours per 12-month rolling time period. Mr. Hric explained that the most they could ever run the boiler from October 15 to May 15 is about 4,800 hours, based on 200 days X 24 hours/day.

I inquired about visible emissions recordkeeping, which is required by Special Condition EUWOODBLLR VI. 2. Mr. Hric informed me that, roughly a couple years ago, a DEQ inspector had come out to the site and told them that they no longer needed to keep the visible emission daily records required by their permit.

This was a surprise to me, as the most recent visit by AQD, according to MACES, had been on 1/15/2013. Mr. Hric could not recall the name of this inspector, so I asked if this could have been a LARA inspector, but he showed me the business card of their LARA boiler inspector, and said that this was definitely a DEQ employee. He mentioned that this person took the time to observe boiler ash being tilled into the soil, while they were onsite, which might indicate a connection with EGLE's Materials Management Division (MMD).

I indicated that I would follow upon the above issue, to see if any other AQD staff might have been out and recalled this conversation.

SC EUWOODBLLR VI. 4 requires the permittee to keep records of date, duration, description of any malfunction and corrective maintenance performed that may impact air emissions from the boiler. Mr. Hric showed me records of boiler maintenance from 4/22/2021, which I photographed to document.

Readings of boiler exhaust from 4/22/2021 showed the following:

- O2: 10.5%
- CO: 273 ppm
- Eff. 79.9%
- CO2: 9.95%
- Stack temperature: 387.7 degrees F
- Ambient temperature: 75.2 degrees F
- Exhaust air: 101.0%
- CO AF: 549 ppm
- NO: 98 ppm
- NOx: 103 ppm
- cNOx: 177 ppm

There were no visible emissions witnessed at any time from the boiler exhaust stack during the inspection. Please see photo 003, of the boiler exhaust stack.

Post-inspection follow up:

Subsequent to the inspection, I asked AQD District Supervisor Brad Myott and MMD inspector Bryan Grochowski if they might recall the DEQ visit and conversation that Mr. Hric referenced, during the 5/14/2021 inspection. Neither AQD nor MMD staff were aware of the discussion, although it should be noted that some AQD and MMD staff have retired or left state employment, over the years.

PTI conditions must be followed, unless a facility gets a PTI modification. EGLE does not allow word of mouth exceptions. Because Bordine Nursery has not had any known issues with visible emissions to date, the absence of recordkeeping is not being cited as a violation at this time.

On 9/8 and again on 9/9/2021, I emailed Mr. Brian Parker, Vice President, since I had 2 email addresses for him, and was not sure which was correct. I explained the issue as described above. I indicated that upon the boiler beginning operations again in autumn 2021, they must resume daily recordkeeping of the daily required visible emission readings, and future instances of noncompliance would result in a violation notice (VN).

During future inspections, AQD will see when the last VE certification was obtained for any reader of opacity. SC EUWOODBLLR VI. 2 require that if opacity readings are not being done by a certified reader, that reader must have been certified at least once within the preceding 5-year period.

Conclusion:

No visible emissions could be observed from the boiler today, and housekeeping at the facility was very good. The single instance of noncompliance observed was the absence of required recordkeeping of the daily required visible emission readings. I was informed by the operator that a DEQ inspector in years past had told them that they did not need to keep these records, because there was no opacity from the boiler. However, EGLE does not approve of word of mouth exceptions to permit conditions, and no currently-employed EGLE staff could recall this discussion. Because the facility does not have a history of excess opacity, and appeared to be making a good faith effort to follow guidance on their air permit, as they understood it, a violation is not being cited at this time.

Note: a lack of daily recordkeeping of daily visible emission readings in the future would warrant a VN. A future inspection will be conducted, to confirm that visible emissions readings are being done and that records are being kept.



Image 1(001) : Wood chipper to right of wood pile.



Image 2(002) : Wood pile, with ash pile at far left.



Image 3(003) : Boiler exhaust stack, with no opacity.

NAME 

DATE 9/24/2021

SUPERVISOR B.M.