

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

A145345028

FACILITY: BERNE ENTERPRISES INC		SRN / ID: A1453
LOCATION: 7190 BERNE RD, PIGEON		DISTRICT: Saginaw Bay
CITY: PIGEON		COUNTY: HURON
CONTACT: Keith Wurst , President		ACTIVITY DATE: 06/07/2018
STAFF: Gina McCann	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Inspection to determine if PTIs were needed and to determine compliance with MACT ZZZZZ. Cited for R201, R910 and MACT ZZZZZ violations.		
RESOLVED COMPLAINTS:		

I (glm) and Mr. Matthew Karl, AQD-Saginaw Bay District office conducted an unannounced, scheduled inspection of Berne Enterprises. Mr. Dace Dufty, Supervisor escorted us through the facility and Mr. Keith Wurst, Owner was part of the inspection debriefing discussion.

The facility does not have active Permits To Install and at the time of the inspection was not in compliance with Rule 201 for installing process equipment, which may emit an air contaminant, without obtaining a permit to install. A violation notice was sent to the facility on June 18<sup>th</sup>, 2018 with a response due date of July 9<sup>th</sup>, 2018.

Berne Enterprises, Inc. is predominantly a steel foundry, though they also cast aluminum and austenitic manganese parts. Their websites list castings varying in sizes from 2 pounds (lbs.) to 23 lbs. Mr. Dufty explained that they can cast upwards of 980 lbs. Mr. Karl and I viewed the production area on June 7<sup>th</sup>, 2018 and returned to the facility for a follow up questions and to communicate findings of the inspection on June 18<sup>th</sup>, 2018.

The facility has one shell mold line that uses (4) four induction furnaces with the following capacities:

- Furnace A- 4,000 pounds
- Furnace B- 4,000 pounds
- Furnace C- 2,000 pounds
- Furnace D- 1,000 pounds-designated for aluminum melt

The molds consist of two parts, the outer molds and inner cores, both of which are made of sand pre-mixed with a chemical binder. Emissions occur in the mold making and core making processes and later when the molds and cores are removed from the cooled castings.

The mold line is a conveyor system which starts in the mold/pouring area. Individual baskets hold the molds. Melted material is poured from a tilt induction furnace into a ladle. The operator moves the ladle from basket to basket, pouring each part. When the baskets have been filled, the conveyor is advanced to the next set of baskets. This continues until the conveyor is full. The conveyor exits the north side of the building as it is advanced. Cooling takes place outside on the north and east sides of the building. When the conveyor has made its way around to the east side of the building the castings have cooled enough to remove the sand molds and cores. "Shakeout" is a manual process, which occurs outside, east of the main building. The operator breaks the spent sand mold from the part and shovels spent sand from the ground into a waste drum. The empty conveyor then reenters the building to begin the process again.

After "shakeout" the parts are then either quenched with water or oil and heated in one of four (4) heat treat ovens for varying lengths of time. This determines the strength of the parts. Two (2) heat treat furnaces are in the main building, near the southwest corner. A small baghouse is associated with these

units. Two additional heat treat furnaces are in the pole building north of the main building. This building was erected in the late 1990's, between 1995 and 1997.

After heat treat the parts are then sent to finishing, which occurs predominantly in the main building, though there are areas for finishing in the pole building. Finishing of the parts includes cutting with saws or torches and grinding. The facility utilizes an electric compressor, circa 1940's, to supply pneumatic air to the finishing equipment. There is an associated stack in the southwest area of the main building. Mr. Dufty explained that it was for air intake for the compressor. Additional metal particulate emissions are generated in the casting cleaning and finishing processes which include cutting with saws or torches and grinding. A Torit baghouse is associated with this equipment and is located on the east side of the facility. Finished parts are stored outside, in large metal bins.

#### Regulatory Discussion

The facility does not have active Permits To Install for the melt furnaces or the heat treat furnaces. The smallest, 1000 lb., furnace may be exempt from permitting under R282(2)(a)iv). Mr. Dufty did not know what fluxing was and said the facility used argon, an inert gas, to drive out unwanted gases. Heat treat furnaces are exempt from permitting under R282(2)(a)(i), if the use does not involve ammonia, molten materials, oil-coated parts, or oil quenching. Mr. Dufty had told us parts are quenched with oil prior to heat treating.

Upon leaving the inspection on June 7<sup>th</sup> Mr. Karl and I noticed emissions coming from the baghouse associated with the heat treat furnaces in the main building. Mr. Dufty explained on June 18<sup>th</sup> it had blown a bag and they had replaced it once we left. Non-compliance with R910 was noted in the violation notice.

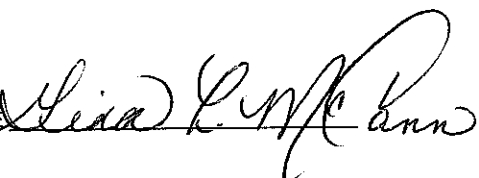
Potential to Emit (PTE) was not obtained during the inspection. The PTE is needed to make a major source determination. Once the PTI application is returned this can be determined.

#### MACT ZZZZZ

The facility does not have a site-specific scrap metal management program in place. The facility purchases stampings from D&W Salvage a scrap metal recycler, in Bad Axe. The MACT requires the facility to maintain records of binder chemical formulation and that it does not contain methanol as a specific ingredient of the catalyst formulation. Mr. Karl and I viewed the Material Safety Data Sheets for the facility. At the time of the inspection, it appeared that Berne was in compliance with this requirement. The MACT also requires the facility to maintain records of annual quantity and composition of each HAP-containing chemical binder or coating material used to make molds and cores, 63.10892(e)(5). Purchase records were available for the coated sand that is used to make molds and cores. At the time of the inspection, it appeared that Berne was in compliance with this requirement. The facility submitted an initial notification in 2009 to comply with the area source MACT for iron and steel foundries. Subsequent annual reports have not been submitted per 63.10890(f). The facility was notified of non-compliance with the MACT in the violation notice sent June 18<sup>th</sup>, 2018.

The facility was in non-compliance with R201, R910 and 40 CFR Part 63 Subpart ZZZZZ at the time of the inspection. A PTI application was sent with the Violation Letter.

NAME



DATE



SUPERVISOR

