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

A626233291

FACILITY: MUELLER BRASS CO.		**SRN / ID:** A6262
LOCATION: 2199 LAPEER AVE, PORT HURON		**DISTRICT:** Southeast Michigan
CITY: PORT HURON		**COUNTY:** SAINT CLAIR
CONTACT: Robert Kartanys , Vice President-Engineering		**ACTIVITY DATE:** 02/05/2016
STAFF: Rem Pinga	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Unannounced Level 2 Inspection		
RESOLVED COMPLAINTS:		

On February 5, 2016, I conducted a level 2 unannounced inspection at Mueller Brass Company located at 2199 Lapeer Avenue, Port Huron, Michigan 48060. The purpose of the inspection was to determine the facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), the administrative rules, the facility's Permit to Install No. 180-00B, and to investigate the 2 Lead spikes in 12/08/15 and 12/14/15 samples collected from the AQD monitoring station located adjacent and NNE of the facility.

During the pre-inspection meeting, I initially showed my credential (ID Badge), stated the purpose of my visit, and gave a copy of the pamphlet "Environmental Inspections: Rights and Responsibilities" to Mr. Robert Kartanys, Vice President for Engineering and facility contact person. Other Mueller Brass staff at the meeting were: Mr. Barry Munce, Mr. Douglas Westbrook, Mr. David Struble, and Mr. Eric Rader. Mr. Kartanys accompanied me during the walk through inspection along with some of the above staff.

The facility manufactures brass rods for use as raw materials by various industrial manufacturers of commercial/industrial products and other applications such as for plumbing/hydraulic fixtures, fittings, valves, pipes, and other components for use in household, automotive, marine, electronic, agriculture, and other industrial applications. The brass alloys at this facility are produced from raw materials (10%), production scrap (20%), and externally purchased salvaged brass metals and chips (70%). Raw materials can come from brass ingots and/or combination of Copper (Cu), Zinc (Zn), and additives such as Lead (Pb), etc. Larger scrap (turnings and solids) are unloaded and weighed by the box-full before transfer to the Casting Shop.

The process starts from scrap brass for melting, alloying, casting, forging, and finishing. Alloying pertains to the addition of other metals to obtain desirable properties/characteristics in the mixture during the melting process. Virgin ingots are added to the scrap plus other metals such as Copper, Zinc, and Lead. Casting follows melting/alloying to form the desired brass product.

As mentioned above, the facility operates under Permit to Install (PTI) No. 180-00B. The site has 1 large building where the melting processes occur and several satellite buildings within one compound as shown in the attached plant layout. The

large building houses the casting, extrusion, and finishing processes. Permit to Install (PTI) No. 180-00B includes 2 emission units (EUSLUDGEDRYER and EU-R-CHIPDRYER) and 5 flexible groups (FGSYSTEMA, FGSYSTEMB, FGSYSTEMC, FGBILLETHEATERS, and FGFACILITY).

EUSLUDGEDRYER - I did not observe the sludge dryer operating during the inspection.

EU-R-CHIPDRYER - During inspection, I observed the chip dryer completely dismantled and removed from the facility. Only the stack remains and the area is now being used as storage.

The casting processes comprise of FGSYSTEMA, FGSYSTEMB, FGSYSTEMC, and FGBILLETHEATERS. Mueller Brass primarily casts 3600 alloy which is a free cutting yellow brass used in plumbing fixtures. The 3600 alloy is approximately: 61% copper, 36.5% zinc, and 2.5% lead. Mr. Kartanys informed me that the facility has reduced the % Lead in its brass manufacturing processes to as low as 0.025% to meet the new standards of 0.2% lead content in solder and flux and not more than a weighted average of 0.25% for the surfaces of pipes, fittings and fixtures as provided in the "*Reduction of Lead in Drinking Water Act*". This act became effective last January 1, 2014. However more than 50% of the products still contain about 2% Lead.

Mueller Brass has three casting lines: System A, System B, and System C; consisting of multiple induction furnaces as represented by the flexible groups (FGs) and emission units (EUs) above. During casting, the metal is heated to approximately 1850°F. The casting molds are made of steel. Before the metal is poured, graphite powder is added to the molds to act as a lubricant. The company has a tracking system to measure pounds of casted metal produced. During casting, impurities rise to the surface. The company skims the ash off the surface. The ash is dropped to a hopper, allowed to cool and then sent off-site for metal reclamation. The reclaimed metal is sent back to Mueller for casting. Any larger skimmings are reclaimed on-site in casting. The Casting Shop produces billets of brass, which are 12" diameter by 85" long.

FGSYSTEMA was installed in March 1955 and is a vertical cast system. It is a batch system, usually used for R&D purposes, and consists of Caster 1, Caster 2, and Caster 5, including Melt Furnaces 1, 2, 5E & 5W and Holding Furnaces 1, 2 & 5. During walk through, I observed the Caster 1 & Caster 2 still on site but for decommissioning. Caster 5 is a small melter (rated at 3,000 lbs capacity), used to produce slugs for R&D purposes. The entire FGSYSTEMA appeared unused and accumulating dust. I was informed that there was no intent to operate these equipment as the fan to the baghouse has been removed.

FGSYSTEMB was installed in May 2000 and is a continuous horizontal casting system. System B consists of Caster 4, including: a channel furnace (41,000 lb.

capacity), a chip furnace (Furnace 4S- 26,000 lbs capacity), and a cast furnace (Furnace 4W- 65,000 lbs capacity). According to the permit, each furnace is rated at 33 ton/hr. System B has the capacity to cast three billets at a time. The chip furnace (4S) on System B is capable of casting wet chips thus eliminating the need for a Chip Dryer and the reason for its removal from the facility. The logs produced by System B are cut into billets by saw. System B 4 Caster was operating during the walk through inspection.

FGSYSTEMC was installed in June 1969 and is a horseshoe shaped vertical casting system. The west melter (Melt Furnace 3W) was added in calendar year 1997. System C consists of Caster 3, including: Melt Furnace 3W, Melt Furnace 3S, Melt Furnace 3N, Hold Furnace 3. The melt furnaces have a capacity of 68,000 lbs each. The holding furnace has a capacity of 72,000 lbs. System C has the potential to cast up to five logs (60,000 lbs) per heat. During the walk through inspection, System C Caster was in operation. I did not observe excessive smoke inside the Casting building and the doors were closed.

To control particulate emissions, the casting furnaces are ducted to a baghouse system for each system. Per PTI No. 180-00B special condition FGSYSTEMA(IV)(1 & 2), FGSYSTEMB(IV)(1 & 2), and FGSYSTEMC(IV)(1 & 2), a baghouse system is installed for each system equipped with pressure drop indicators and appeared to be operating properly during inspection. For Systems A & B, each baghouse has five compartments each, and are rated at 75,000 ACFM each. For System C, the baghouse has eight compartments and is rated at 120,000 ACFM. The exhaust from each system splits equally between the compartments (exhaust does not travel through compartment sequentially). Each compartment contains 16 filters bags. The filter bags are coated with Nutralite (a powder that helps with system efficiency and fire retardation) before installation into the system. The facility checks for filter bag leaks using visolite and blacklight. I was informed that a visolight bag leak check was conducted last December 17-18, 2015. For FGSYSTEMB baghouse, 6-8 bags were replaced. For FGSYSTEMC baghouse, 10-12 bags were replaced.

Per PTI No. 180-00B special condition FGSYSTEMA(IV)(3), FGSYSTEMB(IV)(3), and FGSYSTEMC(IV)(3), each of the baghouses have automatic air valve pulse systems. The pulse systems for Systems B & C baghouses are automatically turned on when the pressure drop reaches 7" and shut-off when the pressure drop reaches 4". The pulse system on System A baghouse is programmed to pulse at regular intervals (1s every 25s). The permit condition requires the company to maintain the compartment pressure drops of all three systems between 4" to 12". This range is based on the manufacturer's recommendation. During inspection, I noted the pressure drop reading on the control panel located in the Baghouse Control Room. I recorded the following pressure drop readings:

System A: shutdown

System B: Bin 1 - 6.89", Bin 2 – pulling air, Bin 3 – 7.84", Bin 4 – 7.81", Bin 5 – pulling air.

System C: Bin 1 – 5.01", Bin 2 - 5.14", Bin 3 – 7.37", Bin 4 - 7.87", Bin 5 – 6.56", Bin 6 - 7.00", Bin 7 - 5.18", Bin 8 – 7.93"

A facility staff monitors the baghouse system during the day shift. He conducts daily inspections and records, in a worksheet, all system operational checks, including the pressure drop readings. All particulate matter collected by the baghouse system are deposited into super sacks and sold to a metal reclamation company. I did not observe any visible emissions from the stacks and inside the baghouse building during the walk through inspection. I had to wear a dust mask to enter the baghouse building.

The facility installed another baghouse system to control indoor fugitive emissions from the casting building (SystemD). Installation of the baghouse may be exempt from permit to install requirements per AQD Administrative Rule R 336.1285(f). I noted the pressure drop readings from System D baghouse system as follows:

D 1 – 3.9" and D 2 – 5.13"

FGBILLETHEATERS - Billets of brass are stored until customer demand calls for finishing operations. The company has three billet heaters. The purpose of billet heating is to make the metal malleable for extrusion into rod. The billets are heated to approximately 1300°F. The billet heaters are natural gas fired and are rated at 10.8 MMBTU/hr each. They were installed in June 1995. I did not conduct a walk through inspection at this area. There are no applicable requirements associated with this flexible group.

FGFACILITY - The facility replaced the natural gas fired boiler on-site with an electric boiler a few years ago. Per Mr. Kartanys, there are no emergency generators on-site. Mueller Brass had Casting System A, Casting System C, the Sludge Dryer, and the Chip Dryer stack tested in January 2011. The test results showed compliance with the following emission limits: Sludge Dryer - 1.0 lb PM10/hr, Chip Dryer - 2.4 lb PM10/hr & 2.0 lb HCL/hr, System A - 1.0 lb PM10/hr, and System C - 1.0 lb PM10/hr.

Per PTI No. 180-00B special condition FGFACILITY(I), the facility submitted emissions records to show compliance with the applicable pollutants. The company's records show that they in compliance with the permit's facility wide emission limits of: 88 TPY PM-10, 89.9 TPY NOx, 9 TPY individual HAPs, and 22 TPY of aggregate HAPs, based on a 12 month rolling basis. As of December 2016, the monthly 12-month rolling total records showed the following totals: 3.8 tons PM-10, 10.50 tons NOx, 0.02 ton Lead (HAP), 0.00 ton HCl (HAP), and 0.02 ton aggregate HAPs. PM-10, Lead, and HCL Emissions are based on recent stack

test results multiplied by emission unit operating hours. The company is using the average between System A and System C test results to estimate the PM10 and Lead emission
factors for System B. The facility used AP-42 emission factor to determine the NOx emissions.

The company is not subject to Part 63 Subpart ZZZZZZ- National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries because they cast simple shapes only, and therefore, do not fit the definition included in the standard for a copper or other nonferrous foundry.

The company is potentially subject to 40 CFR Part 63 Subpart TTTTTT- National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metal Processing Area Sources. Mueller Brass has submitted an October 2012 letter from USEPA Region 5, stating that the facility is not subject to the Secondary Nonferrous Processing NESHAP because it is not an ingot making facility.

During the pre-inspection meeting, I discussed with Mr. Kartanys about cleaning up the current PTI No. 180-00B. The chip dryer can be removed from the permit since it has been completely uninstalled. The additional baghouse system can also be incorporated in a revised permit. There are stack issues that can also be addressed in a permit to install modification.

Overall, I did not find any noncompliance issues during the inspection.

NAME [signature] DATE 2/11/2016 SUPERVISOR CJE