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

A626226182

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: 07/25/2014
STAFF: Rem Pinga	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Level 2 Target Inspection		
RESOLVED COMPLAINTS:		

On July 25, 2014, I conducted a level 2 target 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, and the facility's Permit to Install No. 180-00B.

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 Preside for Engineering and facility contact person. Mr. Barry Munce, Technical Servic Manager, Mr. Dave Stubble, Maintenance Manager, and Mr. Douglas Westbrook were also present. They also accompanied me during the walk through inspection.

The facility manufactures brass rods for use as raw materials by various industrial
manufacturers of commercial/industrial products and other applications such a for plumbing/hydraulic fixtures, fittings, valves, pipes, and other components f 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 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.

EU-R-CHIPDRYER - Chips are unloaded onto a conveyor belt. The chips are checked for moisture content, lead, and chemical impurities. In general, the company rejects deliveries which have over 5% oil content. After the load is checked, the chips are conveyed past a magnet, which removes iron, and through a shaker to remove impurities. In the past, the chips are conveyed eitl to the Chip Dryer or directly to the Casting Shop, depending on
which casting system is operating. Mr. Kartanys mentioned that the Chip Drye

has not been used since 2013 as Caster 4 in FGSYSTEMB can accept wet chips and this process is in the process of being uninstalled. He mentioned that bas on experience, the Chip Dryer is a major source of Lead emissions. During inspection, I observed the chip dryer being decommissioned and dismantled.

The process starts from scrap pretreatment, smelting, alloying, casting, forgin and finishing. Pretreatment includes cleaning and consolidation of scrap in preparation for smelting. Smelting includes the heating and treating the scrap for separation and purification of specific metals. Alloying pertains to the addition of other metals to obtain desirable properties/characteristics in the mixture. Virgin ingots are added to the scrap plus other metals such as Coppe Zinc, and Lead. Casting follows 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 and 3 satellite buildings (Bldg 62, 63, and 72) within one compound. The large building houses the casting, extrusion, and finishing processes. Building 62 is called the forging warehouse which houses 2 heat treat furnaces with water quench, shotblast equipment, 2 aluminum cold forging (no scrap)/finishing (continuous process) with parts washer (Brulin 815 QR), and several forging presses. Building 72 is adjacent to the main building and houses the wastewater treatment process/sludge dryer, additional presses and trimmers.

The casting processes comprise of FGSYSTEMA, FSYSTEMB, FGYSTEMC, an FGBILLETHEATERS. PTI No. 180-00B has several emission units either group into flexible groups with applicable requirements or presented by itself. The emission units (EU) and flexible groups (FG) are shown below:

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUMELTFURNACE1	#1 Electric Induction Melting Furnace	FGSYSTEMA
EUMELTFURNACE2	#2 Electric Induction Melting Furnace	
EUHOLDFURNACE5	#5 Electric Induction Holding furnace	

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUMELTFURNACE5E	#5 East Electric Induction Melting Furnace	
EUASHCHUTE	Ash Chute	
EUHOLDFURNACE1	#1 Electric Induction Holding Furnace	
EUHOLDFURNACE2	#2 Electric Induction Holding Furnace	
EULAUNDERS	#5 & #6 Launder Chutes	
EUMELTFURNACE5W	#5 West Electric Induction Melting Furnace	
EUCHANFURNACE1	Channel Furnace (33 tons per hour electric induction furnace)	FGSYSTEMB
EUCHIPFURNACE2	Chip Melter (33 tons per hour electric induction furnace)	
EUCASTFURNACE3	Casting Furnace (33 tons per hour electric induction furnace)	
EUASHDUMPER	Ash Dumper	
EUMELTFURNACE3S	#3 South Melting Furnace (electric induction furnace)	FGSYSTEMC

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUMELTFURNACE3N	#3 North Melting Furnace (electric induction furnace)	
EUMELTFURNACE3W	#3 West Melting Furnace (electric induction furnace)	
EUHOLDFURNACE3	#3 Holding Furnace (electric induction furnace)	
EUBILLETHEATER1	10.8 MMBtu/hr Natural Gas-Fired Billet Heater #1,	
EUBILLETHEATER2	10.8 MMBtu/hr Natural Gas-Fired Billet Heater #2	FGBILLETHEATERS
EUBILLETHEATER3	10.8 MMBtu/hr Natural Gas-Fired Billet Heater #3	
EU-R-CHIPDRYER	10 MMBtu/hr Natural Gas-Fired Bartlett Snow (Raymond) Chip Dryer	NA
EUSLUDGEDRYER	Natural Gas-Fired Dryer to dry wastewater filter cake	NA

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs

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FGSYSTEMA	Melting Line A	EUMELTFURNACE1, EUMELTFURNACE2, EUHOLDFURNACE5, EUMELTFURNACE5E, EUASHCHUTE, EUHOLDFURNACE1, EUHOLDFURNACE2, EULAUNDERS, and EUMELTFURNACE5W
FGSYSTEMB	Melting Line B	EUASHDUMPER, EUCHIPFURNACE2, EUCHANFURNACE1, and EUCASTFURNACE3
FGSYSTEMC	Melting Line C	EUMELTFURNACE3S, EUMELTFURNACE3N, EUMELTFURNACE3W, and EUHOLDFURNACE3
FGBILLETHEATERS	Billet Heaters	EUBILLETHEATER1, EUBILLETHEATER2 and EUBILLETHEATER3
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	

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. Note: The *Reduction of Lead in Drinking Water Act* was signed into law on January 4, 2011. The new law provides a 36 month implementation period to decrea the amount of lead in solder and flux to 0.2% and not more than a weighted average 0.25% for the surfaces of pipes, fittings and fixtures. The effective date of the Act is January 1, 2014. 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.

Mueller Brass has three casting lines: System A, System B, and System C; consistin of
multiple induction furnaces as represented by the flexible groups (FGs) and emissior

units (EUs) above. During casting, the metal is heated to approximately 1850°F. Th casting molds are made of steel. Before the metal is poured, graphite powder is add 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 ashoff the surface. The ash is dropped to a hopper, allowed to c 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 Cas 5, including Melt Furnaces 1, 2, 5E & 5W and Holding Furnaces 1, 2 & 5. Caster 1 & Caster 2 remain on-site but for decommissioning. Caster 5 is a small melter (rated a 3,000 lbs capacity), used to produce slugs for R&D purposes. Mr. Kartanys mention that Caster 5 operates for a couple weeks (2 weeks) per year. Caster 5 was not in u during the facility walk through.

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 lbs 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. As mentioned above, the chip furnace (4S) on System B is capable of casting wet chips. The logs produced by System B are cut into billets by saw. System B was in operation during facility walk through.

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 furna has a capacity of 72,000 lbs. S ystem C has the potential to cast up to five logs (60,0 lbs) per heat. Only Caster 3S was in operation during the facility walk through.

Each casting furnace vents through a ventilation system to a positive pressure baghouse 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 install for each system
equipped with pressure drop indicators and appeared to be operating properly. For Systems A & B, each baghouse has five compartments each, and are rated at 75,00 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 t

system. I was informed that the facility checks for filter bag leaks using Visilite and blacklight on a bi-weekly basis.

Per PTI No. 180-00B special condition FGSYSTEMA(IV)(3), FGSYSTEMB(IV)(3), an 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 the facility walk through, I observed 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 - off, Bin 2 - off, Bin 3 – 9.5", Bin 4 – 7.0", Bin 5 – off.

System C: Bin 1 – 3.6", Bin 2 - 4.6", Bin 3 – 6.1", Bin 4 - 7.2", Bin 5 - 5.8", Bin 6 - 6.5", Bin 7 - 5.6", Bin 8 - 6.5"

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. I was informed that the staff assigned to the equipment is currently investigating why Bin 1 pressure is falling below 4". The particulate matter collected by the baghouses is deposited into super sacks and sold to a metal reclamation company. I did not observe any visible emissions from the stacks during my inspection.

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. The company was operating the billet heaters during the inspection. There are no applicable requirements associated with this flexible group.

EUSLUDGEDRYER - Filter cake containing metal oxides, is derived from the company's waste water using a press. A sludge dryer dries the filter cake to about 50% moisture. The filter cake is collected in a super sack and sold to a company for zinc and copper reclamation. The sludge dryer was installed in November 1998. Per PTI No. 180-00B special condition EUSLUDGEDRYER(IV)(1), emissions from the dryer are controlled by a wet scrubber. The scrubber is equipped with a liquid flow gauge. The scrubber generally operates between 2 to 2.5 gallons per minute. Mr. Kartanys mentioned that

the sludge dryer operates for approximately one 12-hour shift per week. The sludge dryer was not operating
during the inspection.

FGFACILITY - The facility has dismantled and removed from site the 2.326 MMBTU/ natural gas fired boiler manufactured by Superior Boiler Works. They replaced it with an electric boiler. There are emergency generators on-site. During the inspection, I observed a parts washer located in the maintenance area. The lid was closed and operating procedures were posted inside the lid. Mr. Kartanys mentioned 3 additiona parts washers located in various sites within facility property. Mueller Brass installed additional baghouse in November 2012 to control the general in-plant air from the ma building Casting area. Installation of the baghouse is exempt from permitting pursua to Rule 285(f). Mueller
Brass had Casting System A, Casting System C, the Sludge Dryer, and the Chip Dryer stack tested in January 2011. The test results show compliance with the following emissions limits: Sludge Dryer - 1.0 lb PM10/hr, Chip Dryerv- 2.4 lb PM10/h & 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 emissio 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, bas on a 12 month rolling basis. As of June 2014, the monthly 12 month rolling records showed the following totals: 3.2 tons PM-10, 9.97 tons NOx, 0.02 ton Lead (HAP), 0. 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 Standard for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Oth Nonferrous Foundries because they cast simple shapes only, and therefore, do not fi the definition included in the standard for a copper or other nonferrous foundry.

The company is potentially subject to Part 63 Subpart TTTTTTT- National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metal Processing Area Sources, however, the AQD has decided not to take delegation of NESHAP TTTTTTT at this time.

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

NAME [illegible] DATE 9/25/2014 SUPERVISOR CTE