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

B165048710

FACILITY: Mueller Brass Co		**SRN / ID:** B1650
LOCATION: 302 ASHFIELD, BELDING		**DISTRICT:** Grand Rapids
CITY: BELDING		**COUNTY:** IONIA
CONTACT: Coley Wood , Manufacturing Manager		**ACTIVITY DATE:** 04/19/2019
STAFF: Eric Grinstern	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Unannounced compliance inspection		
RESOLVED COMPLAINTS:		

FACILITY DESCRIPTION

The facility is a brass mill that manufactures rod for the use in machining, thread rolling, and forging operations. The facility also has a copper upcast process for the production of copper coil which is further processed to make electric busbar.

REGULATORY OVERVIEW

The facility holds one air use permit (PTI No. 16-11) which covers all of the permited operations at the facility. PTI No. 16-11 was issued October 20, 2011 (Revised March 15, 2012) to address violations of the emission limits associated with the West Chip Dryer, which was previously permitted under PTI No. 505-93. The permit also addressed exceedances of the NAAQS for lead, as recorded at nearby ambient air monitors. The facility is also subject to Consent Order No. 9-2011, (effective date December 1, 2011). The consent order was issued in response to the above described emission limit violations and lead NAAQS exceedance.

The facility appears to be subject to the Secondary Brass and Bronze Production Plants NSPS, 40 CFR Subpart M. Subpart M regulates electric furnaces with a production capacity of 2,205 pounds or greater that were constructed or modified on or after June 11, 1973.

Furnaces No. 7 and No. 8 were permitted on June 19, 1973 via PTI No. 223-73. The furnaces are 800 KW each and have a capacity greater than 2,205 pounds. The standard restricts opacity from an electric furnace to 10 percent or less (40 CFR 60.132(b)). If applicable, the electric furnaces would also be subject to the General Provisions of 40 CFR 60 1-19 (Subpart A), including applicable performance test requirements contained in 40 CFR 60.8. An applicability determination will be made regarding the furnaces being subject to Subpart M.

The facility was previously evaluated as being a subject source under Subpart TTTTTT, Secondary Nonferrous Metals Processing Area Source. An applicability determination conducted by Region 5, EPA, concluded that the facility was not subject to the NESHAP, based on the facility producing brass billets. Billets are not a listed form of brass listed in the NESHAP as a product produced by secondary nonferrous metal processing facilities.

COMPLIANCE EVALUATION

Onsite inspections of the facility were conducted on April 19, 2019 and April 26, 2019. On April 19th, the plant manager was not onsite, so a brief tour of the facility was conducted with Caleb Wieland. EG returned on April 26, 2019, and met with Coley Wood, Plant Manager. Mr. Wood accompanied EG during the compliance inspection of the facility.

Prior to entering the facility a survey of the perimeter was made. No abnormal odors or opacity were noted.

Below is an evaluation of the processes limitations and restrictions contained in PTI No. 16-11.

FGCHIPDRYERS

Flex group includes the east chip dryer (EUECHIPDRYER) and the west chip dryer (EUWCHIPDRYER). The East Chip Dryer ceased operation and was disassembled several years ago. Since the last compliance inspection, the West Chip Dryer has not operated, except for a short period of time when the wet chip melter in Port Huron was down. Additionally, The facility requested to restart the West Chip Dryer while the wet chip melting operation at their Port Huron facility was down to allow for the installation of a new baghouse. Mueller was informed that restarting the West Chip Dryer would required compliance testing. The facility requested to start the West Chip Dryer and conduct and engineering study to determine if operation of the chip dryer was viable. The facility restarted the West Chip Dryer on March 28, 2019 and conducted an engineering study/emissions test on April 4, 2019. The dryer was subsequently shutdown on April 7, 2019 and has not been restarted. The facility provided the results of the emission study (below), which where below the permitted emission limits.

The engineering study evaluated emissions utilizing EPA reference methods, however, since the study was not a full 3-run emission test, the results can not be used to demonstrate compliance. The facility has indicated that they currently do not have plans to restart the West Chip Dryer, however if they do, a complete compliance test is required.

Pollutant	Average Test Result	Permit Limits
PM	0.35 lb/hr	1.0 lb/hr
	0.031 lb/1000 lb of exhaust gas (dry)	0.1 lb/ 1,000 lbs
HCL	0.004 lb/hr	0.06 lb/hr
	0.473 mg/dscm	8.0 mg/dscm
H2SO4	0.02 lb/hr	0.2 lb/hr
	2.021 mg/dscm	25.0 mg/dscm
Lead	0.104 lb/hr	0.3 lb/hr
	10.64 mg/dscm	23.0 mg/dscm

Emission Limits

The flex group establishes emission limits for particulate, lead, sulfuric acid and hydrogen chloride.

Compliance with the emission limits for the West Chip Dryer was established via stack testing conducted on October 1, 2010.

Compliance will be established though emission testing if the dryer is ever restarted. On-going compliance is based on proper operation of the control equipment.

Process/Operational

The facility is requiredy to develop and implement a PM/MAP. The facility has developed and submitted a PM/MAP.

Requires that the afterburner on the chip dryer maintain a minimum temperature of 1500 degrees F when the dryer is operating. Review of the temperature records showed the minimum temperature of 1500 degrees F appeared to be maintained during operation of the dryer while chips were processed from March 28, 2019 through April 7, 2019. (Records attached)

Requires that the associated cyclone, precooler/wet cooler/wet scrubber and demister be maintained and operated, including maintaining the water flow, nozzle water pressure and nozzle air pressure in the ranges specified by the manufacture or as determined during testing. Review of the facility records for the previous 12-month time period showed the monitored parameters to be within the specified ranges contained in the PM Plan. (Records attached)

Testing

FGCHIPDRYERS requires testing of the each chip dryer within 90 days of restart and every 5 years thereafter. The East Chip Dryer has been removed. The West Chip Dryer will be tested if it is restarted.

Monitoring/Recordkeeping

Requires the monitoring and recording of the thermal oxidizer temperature continuously.
The facility provided the thermal oxidizer records for the operating period from March 28, 2019 to April 7, 2019.

FGCHIPDRYERS requires the facility to monitor and records both the nozzle water pressure and water flow rate for the scrubber system. The facility provided records for the past 12-months documenting compliance with these requirements. (Records attached)

Stack/Vent Restrictions

West chip dryer stack maximum diameter of 24 inches and a minimum height of 122 feet. Visual observation of the stack showed that it appeared to meet the dimensions.

FGMELTFURN

Flex group includes the three melting furnaces EUMELTFURN7, EUMELTFURN8, EUMELTFURN9 and associated controls. The facility has removed EUMELTFURN9. At the time of the inspections, the facility was operating EUMELTFURN7. The furnaces currently melt solids (copper, lead, zinc). The furnaces are currently not melting chips, and the flow feeder has been removed, but they are capable of melting chips. Furnace charge consists primarily of spec. lead and zinc ingot and #1 and #2 copper chop. Additionally, internal copper scrap is charged to the furnaces. Furnaces EUMELTFURN7 and EUMELTFURN8 supply molten brass to a 20,000 pound holding furnace that supplies the molten brass to horizontal casters TG7 and TG8.

Emission from FGMELTFURN are controlled by the East Baghouse.

The facility currently processes about 75 tons of brass per day. Current production is 07:00-19:00, 7 days per week.

Emission Limits

The flex group establishes emission limits for particulate, lead, copper and zinc.

Compliance with the emission limits were established via stack testing conducted on November 4-5, 2010. Continued compliance is demonstrated via proper operation of the control equipment.

Process/Operational/Monitoring/Recordkeeping

Requires the facility to develop and implement PM/MAP. The facility has developed and submitted a PM/MAP.

Requires that the baghouses be installed and maintained. Since EUMELTFURN9 has been removed, the baghouse associated with the furnace was also removed. (West Baghouse) Emissions from EUMELTFURN7 and EUMELTFURN8 are controlled by the East Baghouse. The East Baghouse is a two chambered unit (East and West chambers). The facility previously notified AQD that they experienced a fire in the baghouse. The facility stated that casting was not operating at the time of the fire, and they were repairing the baghouse prior to restarting casting. As part of this inspection, additional details regarding the baghouse fire were requested and supplied. The fire occurred on Saturday, March 16, 2019, at approximately 11:50 a.m. Casting resumed on March 22, 2019, after the East Chamber was re-bagged. The West Chamber was sent off-site to repair damage caused by the fire. Repairs to the East Baghouse are estimated to be completed by June 3, 2019. The facility stated that they operated one melting furnace with control by just the East Chamber of the baghouse, 12 hours a day (with additional overtime) for 7 days a week from March 22, 2019 until May 1, 2019. Air Flow was adjusted while operating with just the East Chamber to correct the pressure differential. The facility stated that they stopped the casting operation on May 1, 2019 and have no plans to restart until the repairs are completed.

Special Condition No. IV.1, states that the permittee shall not operate EUMELTFURN7 and EUMELTFURN8, unless the East Baghouse is installed, maintained and operated in a satisfactory manner. Satisfactory operation of the baghouse includes maintaining the pressure drop in the range as specified by the manufacture or as determined during performance testing.

The facility is required to record the pressure drop readings on a continuous basis (at least once every 15 minutes). The facility has established a normal pressure drop range of 2.0-8.0 inches. They have also established a range of 2.5 to 7.5 inches, outside of which requires corrective action.

Pressure drop records were requested and provided for the previous three months. Review of the records showed the following deviations from the established pressure drop range:

January 31, 2019 - February 1, 2019	Pressure drop readings over 8.0' on the West Chamber
February 1, 2019 - February 2, 2019	Pressure drop readings of 0.0" for both the East and West Chambers
February 6, 2019 - February 8, 2019	Pressure drop readings of 0.0" for the West Chamber
February 20, 2019	Pressure drop readings of 0.0" for the West Chamber
February 21, 2019	Pressure drop readings over 8.0" on the East and readings of 0.0" on the West Chamber
March 16, 2019	Pressure drop readings of over 8.0" for the West Chamber

March 16, 2019 - April 27, 2019	Pressure drop readings of 0.0 for the West Chamber, baghouse fire

Note: Facility maintenance records did not contain any documentation of corrective action taken in response to the pressure drop deviations.

Observation of the pressure drop gauge during the inspection showed a reading of 5.4 inches for the East Chamber, the West Chamber was not operational.

Baghouse airflow monitoring records were provided for March 27, 2018, September 11, 2018, and April 30, 2019.

The records show the following cfm from the baghouse:

March 27, 2018: 58,900 cfm
September 11, 2018: 66,800 cfm
April 30, 2019: 38,160 cfm

The baghouse airflow monitoring sheet lists the following cfm parameters:

Baseline: 60,000 cfm
Minimum: 57,000 cfm
Maximum 63,000 cfm

The decrease in cfm documented on April 30, 2019 is a result of the facility adjusting the air flow to maintain the correct pressure differential while only operating the East Chamber. The decrease in air flow could potentially result in a decrease in capture efficiency at the furnace hoods. While on the roof of the facility, staining/particulate was observed around the edges of the upper building structure from which the scavenger hoods exhaust the furnace emissions. The presence of the staining/particulate indicates fugitive emissions. The fugitive emissions could possibly be resulting from the scavenger hoods not adequately evacuating the furnace emissions.

Stack/Vent Restrictions

Requires an East Baghouse stack maximum diameter of 50 inches and minimum height 35.7 feet. Visual observation of the stack showed that it appeared to meet the dimensions.

Observation of the baghouse exhaust showed no opacity at the time of the inspection.

Copper Upcast Machine

In 2016 the facility installed a used copper upcast machine to produce small diameter copper coils. The copper coil is extruded to produce electric busbar.

On June 10, 2016, the facility provided the AQD with a Rule 290 exemption determination regarding the copper upcast machine that was installed at the facility. The copper upcast machine is an integrated melting, holding and casting unit located where the No. 9 brass line previously existed. The electric resistance melting unit has a 1,320 pound per hour melt rate, while the crucible holder has a capacity of 5,060 pounds. The facility

is casting about 30,000 pounds of copper per day currently. The melting unit is charged with pure copper cathode sheets that are dried in an existing heat treat oven prior to charging. Graphite pellets are added to molten copper within the furnace to burn off any oxygen. A hood above the furnace captures any emissions. The hood ducts to a small internal dust collector. Previous inspection reports identify the collector as a baghouse, however, the collector is a cyclone. The facility currently operates the process 24- hours a day, producing copper coil. Close up observation of the upcast process did not occur during this inspections since it is located in a lead exposure zone which requires additional PPE/respirator.

During the onsite inspection on April 26, 2019, the facility stated that they had removed the cyclone control device from the upcast process. Subsequent to the inspection, the facility provided notification that the cyclone was reinstalled on the upcast process on May 1, 2019. While the AP-42 emission factor for baghouse controlled emissions was 0.5 pounds per ton of melt, the uncontrolled emission is 7.0 pounds per ton of melt. Assuming an emission factor of 7.0 pounds per ton of melt would put emissions well above the allowed 500 pounds per month to qualify for exemption under Rule 290.

The facility believes that the emission factors greatly over estimate emissions from the upcast process. The facility has contacted a stack testing firm to evaluate the possibility of conducting emissions testing on the upcaster.

Ambient Air Monitoring: Two ambient air monitors are located east of the facility. One is located on Merrick Street and another is located off Reed Street. The Reed Street monitor is currently not in operation. The Merrick Street monitor has shown lead levels in compliance with the 3 month NAAQS since November 2010, while the Reed Street monitor has demonstrated compliance since October 2011.

On July 29, 2013, AQD submitted to USEPA "Michigan's 2008 Lead NAAQS Nonattainment State Implementation Plan for Ionia County (partial), which details actions taken to address lead nonattainment associated with Extruded Metals. USEPA approved the State's request to re-designate the area to attainment. The notification was published in the Federal Register on May 31, 2017. The re-designation become effective on July 31, 2017, via direct final rule.

Consent Order No. 9-2011

The consent order requires compliance with the emission limits for the West Chip Dryer and operation of FGCHIPDRYERS under a PM/MAP that has been approved. The consent order is currently active.

Compliance with the active consent order is based primary on complying with PTI No. 16-11.

Miscellaneous

In addition to the above permitted processes, the facility has exempt equipment used to further process the brass billets and copper coil.

Extrusion: The extrusion process is used to manufacture the desired rod or coil shape and size. There is no capture or emissions control associated with extrusion. Minimal emissions are expected from this process and is exempt from permitting under Rule 285(2)(l)(i).

Pickling: The facility utilizes two sulfuric acid pickling lines, one for straight rod and one for coils. The pickling lines vent to the general in-plant environment. The pickling process is exempt from permitting under Rule 285(2)(r).

Finishing: Finishing operations primarily involve straightening the rod, cutting to size and chamfering the ends. Emissions are vented to the general in-plant environment. These processes appeared to be exempt from permitting under Rule 285(2)(l).

Conclusion

Based on the information and observations of this inspection, the facility appears to be in compliance with applicable air quality rules and regulations, with the exception of the following:

FGMELTFURN
VI. DESIGN/EQUIPMENT PARAMETERS
Special Condition 1.

The permittee shall not operate induction melting furnaces 7 and 8 (EUMELTFURN7 and EUMELTFURN8) in FGMELTFURN unless the east baghouse is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the baghouse includes maintaining the pressure drop in the range as specified by the manufacturer or as determined during performance testing. **(R 336.1205, R 336.1225, R 336.1331, R 336.1901, R 336.1910)**

- The facility operated FGMELTFURN on ten days, for the period of records reviewed, when one or both chambers of the East Baghouse were had a pressure drop outside of the established range.
- The facility operated FGMELTFURN from March 16, 2019 through April 30, 2019 with only the East Chamber of the East Baghouse operational.

Operation under these conditions constitute failure to properly maintain and operate the baghouse in a satisfactory manner. A Violation Notice will be issued addressing the cited violations.

NAME Eric Drenter DATE 6/3/19 SUPERVISOR