

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Self Initiated Inspection

P054237350

FACILITY: Port City Architectural Signage		SRN / ID: P0542
LOCATION: 2350 South Getty Street, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Timothy Mills, Owner/President		ACTIVITY DATE: 10/26/2016
STAFF: Eric Grinstern	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced Inspection		
RESOLVED COMPLAINTS:		

### FACILITY DESCRIPTION

The facility's primary activity is the manufacturing of aluminum and bronze signs. Operations consist primarily of casting, finishing and coating. Since the last inspection conducted in 2014 the facility has expanded and moved the foundry operations into the new portion of the plant.

The facility currently operates one shift (07:00-15:30) five days a week and employs 15 workers.

### REGULATORY OVERVIEW

The facility is a small foundry operation that would be classified as a minor source. The facility currently does not hold any air use permits.

The facility is currently not subject to 40 CFR Part 63 Subpart ZZZZZZ, Aluminum, Copper, and other nonferrous foundries area source NESHAP. The facility is not subject because they do not melt metal above the applicability threshold of 600 tons per year.

The facility only melts spec alloy ingot for both the aluminum and bronze, as well as internal runaround. Therefore, the facility is not subject to any secondary metal processing NESHAPS.

### COMPLIANCE EVALUATION

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

At the facility staff met with Timothy Mills, Owner/President and Mert Mills.

### FOUNDRY

#### Mold Making

Since the last inspection the facility has replaced the green sand system and is using an air set (Alpha Set System). The facility has installed a sand mixer with a rated capacity of 125 pounds per minute. Molds are manually packed and prepped on a conveyor line. The facility does not make any cores. Any cores that are used would be purchased. The facility has two sand towers for which they are installing duct work to connect to a collector to control emissions during filling.

#### Melting

The facility has three furnaces, one with a 30 pound aluminum holding capacity, one with a 50 pound aluminum holding capacity and one with a 90 pound aluminum holding capacity. Above the furnaces is a hood the vents to the outside atmosphere uncontrolled. The bronze holding capacity of each furnace would triple compared to the aluminum weight. The furnaces are crucible units, for which the crucible pots are removed from the furnace for pouring. The facility does not use a reactive flux while the crucibles are in the furnaces. Once the crucibles are removed, they are taken to station where the bronze is skimmed and the aluminum is degassed with argon and a small amount of flux is used.

The facility estimates that they currently melt approximately 14 tons of bronze and 2-3 tons of aluminum annually.

The furnaces are exempt from the requirement to obtain a permit to install under Rule 282(a)(iv).

#### Pouring/Cooling /Shakeout

Molds are manually poured and cooled on the conveyor line on which they are produced. Molds are manually knocked out and dumped in a hopper. Emissions associated with pouring/cooling/shakeout are released into the in-plant air uncontrolled.

#### Finishing

After the signs are cast in the foundry, they are finished via grinding, sand blasting, etc., which have baghouse control that vent to the in-plant atmosphere. Operations are exempt from the requirement to obtain a permit to install under Rule 285(l)(vi). The facility has purchased an external baghouse and plans to route the finishing operations to this baghouse.

#### Coating

The facility has one booth for the application of coatings. At the time of the inspection the booth had particulate filters in place. Mr. Mills stated that they use approximately 10 gallons of coatings a month, minus the catalyst. The maximum usage was estimated at 15 gallons. The facility has purchase records to document paint usage. The painting operations are exempt from the requirement to obtain a permit to install under Rule 287(c)(i). Adjacent to the coating booth is a small oven used to cure the coated parts.

#### Conclusion

During the last inspection staff directed the facility to submit a permit to install application for the planned foundry modifications. The facility did not submit an application addressing the sand mixer, mold making, pouring, cooling and shakeout processes. A violation notice will be issued for the unpermitted processes.

NAME



DATE

10/28/2016

SUPERVISOR

