

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P127262794

FACILITY: MONTAGUE METAL PRODUCTS		SRN / ID: P1272
LOCATION: 4101 W FRUITVALE ROAD, MONTAGUE		DISTRICT: Grand Rapids
CITY: MONTAGUE		COUNTY: MUSKEGON
CONTACT: Mark Morris , Vice President		ACTIVITY DATE: 04/20/2022
STAFF: Eric Grinstern	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: Minor
SUBJECT: Unannounced compliance inspection		
RESOLVED COMPLAINTS:		

FACILITY DESCRIPTION

The facility is an aluminum foundry that utilizes an olivine sand molding system to manufacture decorative aluminum products, such as, address plaques, flagpole ornaments, and weathervanes. Operations include metal melting, mold making, pouring, cooling, shakeout and finishing operations. Additionally, the facility manufactures laser and plasma cut aluminum house numbers, letters, and plaques. The facility has been in operations since 1989 and currently employs 24 workers. The facility operates one shift (07:00–15:00), five days a week (M-F).

REGULATORY ANALYSIS

The facility currently does not hold any air use permits for their operations. The facility estimated metal throughput at 45 tons per year. This amount of throughput is below the threshold for applicability (600 tons per year) to Subpart ZZZZZZ (Non-Ferrous Foundry NESHAP).

COMPLIANCE EVALUATION

At the facility, staff consisting of Eric Grinstern (EG), met with Mark Morris, VP.

Below is a summary of the facility operations.

MOLD MAKING OPERATIONS

The facility uses olivine sand for mold making. The facility does not use any cores. Post shakeout sand is stored inside the facility and loaded into a muller for recycling,

as needed. The facility has one sand muller to recycle/condition the sand for mold making. The muller does not have capture or control and is not vented to the outside atmosphere. The facility continually recycles the molding sand with a limited amount of new sand added, as needed. The muller supplies sand to four (4) mold machines. The facility stated that only two (2) of the mold machines are operated at a time. Additionally, the facility stated that no mold release or coating agents are used. The facility does not use any binding agents, except for moisture, to form molds.

Since there are no binders added to the sand, and the wet nature of the sand, no particulate emissions were observed from the sand molding operations.

MELTING

The facility has one (1) natural gas-fired melting furnace with a holding capacity of 600 pounds. The furnace was installed four years ago. The furnace has a hood that vents emissions uncontrolled to the outside atmosphere. The furnace is equipped with a hood that is not used. The facility stated that they melt spec ingot and internal runaround. The facility only melts 316 aluminum alloy. The facility stated that a small amount of flux (HA Weldron WF 132-I INJ) is used in the furnace when internal runaround is melted. The facility estimated that one or two drums of flux is used on an annual basis.

Based on the size of the furnace, it would be exempt from permitting under Rule 282 (2)(a)(iv) if reactive flux was not used in the furnace.

POURING/COOLING/SHAKEOUT

The facility manually ladles molten aluminum from the furnace and hand pours molds. Poured molds are allowed to cool prior to shakeout. The facility has a small vibratory shakeout unit. Sand from shakeout is conveyed to an in-plant storage area, while the casting is processed in the finishing department. Pouring/cooling/shakeout emissions are uncontrolled and vent to the in-plant atmosphere.

FINISHING

Finishing operations are conducted in a single room. Finishing operations consist of various grinders, saws, drills, and sanding units. The "Time Saver" sanding unit has an associated dust collector that vents internally. The rest of the finishing operations do not have capture or control and vent into the in-plant atmosphere.

The finishing operations appear to be exempt from air use permitting requirements under Rule 285(2)(l)(vi)(B).

PAINTING

The facility has both wet and powder coating operations. The facility has one (1) small spray paint booth that has limited use. The facility stated that they paint one product in the booth and use approximately 5 gallons of paint a month. EG noted that the mat filter was in need of maintenance. Mr. Morris agree to address the filter asap.

The paint booth appears to be exempt from air use permitting requirements under Rule 287(2)(c).

The facility has three (3) powder coating booths. Each of the booths have internally vented collectors that allow for the recycling of the collected powder. The facility has two (2) powder coat cure ovens, of which only one is operational. The operational oven was estimated to be 2-3 million btu in size.

The powder coating operation appears to be exempt from air use permitting requirements under Rule 287(2)(d).

SHEET METAL CUTTING

The facility has one (1) plasma cutter and one (1) laser cutter used to cut house numbers and letters from aluminum sheet stock. Both of the cutters are controlled by one collector that vents to the outside atmosphere. Observation of the exhaust showed what appeared to be intermittent visible emissions. The emissions were less than 20% opacity. Mr. Morris stated that they have the equipment manufacturer conduct maintenance on the collector. Mr. Morris agreed to have the collector serviced to address the visible emissions.

The cutting operation appears to be exempt from air use permitting requirements under Rule 285(2)(I)(vi)(C).

CONCLUSION

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

Failure to obtain a permit to install for an aluminum foundry, including mold making operations, melting furnace, pouring, cooling, and shakeout operations.

A Violation Notice (VN) will be issued to address the facility's failure to obtain a permit to install (Rule 201) for the listed foundry processes.

NAME Eric Grinstern

DATE 05/05/2022

SUPERVISOR HH