

N1019

MANILA

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

N101949593

<b>FACILITY:</b> NORTHFIELD MANUFACTURING	<b>SRN / ID:</b> N1019
<b>LOCATION:</b> 38549 WEBB, WESTLAND	<b>DISTRICT:</b> Detroit
<b>CITY:</b> WESTLAND	<b>COUNTY:</b> WAYNE
<b>CONTACT:</b> Scott Tynan ,	<b>ACTIVITY DATE:</b> 07/12/2019
<b>STAFF:</b> Jill Zimmerman	<b>SOURCE CLASS:</b> MINOR
<b>SUBJECT:</b> Target Inspection	
<b>RESOLVED COMPLAINTS:</b>	

**DATE OF INSPECTION** : 07/12/2019  
**TIME OF INSPECTION** : 10:00 am  
**INSPECTED BY** : Jill Zimmerman  
**PERSONNEL PRESENT** : Scott Tynan, President  
**FACILITY PHONE NUMBER** : 734-729-2890  
**FACILITY EMAIL ADDRESS** : stynan@northfieldfoundry.com

### **FACILITY BACKGROUND**

Northfield Foundry is a job specific metal foundry, making steel and iron castings, usually for the automotive industries with some governmental contract. The facility operates one shift per day, five days per week, with additional time worked when needed. The facility has been at this location since 1984 and no major equipment has been added or removed since the initial set-up, according to staff. The facility is located just west of Hix Street in an industrial park between Ford Road and Warren Avenue in Westland, Michigan.

### **REQUIRED PPE**

During the onsite inspection, I wore steel toed shoes and eye protection.

### **COMPLAINT/COMPLIANCE HISTORY**

The last odor complaint that was received in 2014. It appears that the odor complaints stopped around the same time that the facility started using a new binder resin.

### **PROCESS EQUIPMENT AND CONTROLS**

The facility operates the process on a job specific basis, which means parts are made based on client need, and the parts are only made when the client orders the parts. The client sends the specifications for the part to the facility. A wooden structure is built in the woodworking area of the facility for the sand mold. A sand mold is created, which may include a sand core. The sand core is a holder placed in the mold. Each sand mold is used only once, though the sand is recycled and reused. The metal is melted in one of three furnaces. The raw materials include approximately 1/3 virgin pig iron, 1/3 scrap metal, and 1/3 remelting scrap created from molds poured at the facility. Additional metals such as copper or nickel are added as needed to meet the required specifications. There is a 3,000 pounds melting furnace, 2,000 pounds melting furnace, and 400 pounds melting furnace, and each is heated electrically. The liquid metal is poured into the mold and set. The sand is removed. Extra metal and scrap metal are remelted and reused. There are two melting lines, one for larger parts and one for smaller parts. The facility pours approximately 5 batches per day.

The facility operates one small heat treat furnace, which is fueled by natural gas. The heat treat furnace is 5 ft by 5 ft by 5 ft. The unit is heated by natural gas and runs at a maximum temperature of 1650F. According to an employee, John, the unit operates at approximately 750,000 Btu heat input. Most heat treat work is sent to a third-party facility to be completed.

The facility controls the sand reclaimer units with one of two baghouses. The larger baghouse, located in between the two connected buildings, is rated at 40,000 cfm. The smaller baghouse is located on the east side of the building and is rated at 5,000 cfm. The units are inspected by the maintenance employee and a log is kept of all maintenance performed. The bags are changed on a routine schedule and new bags are ordered when the bags are changed, so that a spare set of bags is always available on site. The baghouse maintenance log is attached to this report. All the bags in the baghouse were changed on June 14, 2019.

The final product is packed and shipped to the client. The part specifications are shipped to the client too, unless the part is made frequently in which case, the specifications are stored onsite.

### **INSPECTION NARRATIVE**

I arrived in the area of the facility at 10:00 am and performed odor surveillance. I did not detect any odors offsite, though I did detect a slight odor just outside of the facility.

I arrived at the facility and met Mr. Scott Tynan, who is the president of the company. Mr. Tynan explained the process and the history of the company. The company moved to this location in 1984, although the company began operation at a different location at an earlier time. Since the last inspection, no equipment has been removed or added to the process.

The company plans to install a new more efficient thermal sand reclaimer. I explained that a new permit may be needed before the new equipment is added to the facility. The company is also planning to add a new conveyor mold line farther into the future. I explained that a permit may also be needed for that project as well.

I explained that the main purpose of my inspection was to determine if the facility was subject to 40 CFR 63 Subpart ZZZZZZ and Rule 950. I asked Mr. Tynan for the potential to emit calculation for the facility. This information will help me to determine the size of the facility and actions need to be done to ensure compliance with this regulation. Mr. Tynan explained that the facility only melts iron, and that the facility is not a nonferrous foundry. Therefore, the facility is not subject to 63 Subpart ZZZZZZ and Rule 950.

Next, we walked through the plant. The facility was pouring during the onsite inspection. Some slight smoke was visible during the pour. Generally, there was not a smoky haze throughout the facility. Mr. Tynan said he has noticed the improvement since switching to the new resin binder. He said that he has also noticed less odors since the binder switched.

We then walked outside to inspect the baghouse. There was some debris in the area under the baghouse, but it was contained in the walled off area of the baghouse. Mr. Tynan said that the area is inspected regularly for malfunctioning bags, and that all the bags are replaced about once per year. The maintenance log for the baghouses is attached to this report.

The facility operates a small metal heat treat natural gas fired furnace. This furnace, rated at 750,000 BTU per hour, is exempt from permitting by Rule 282(2)(a)(i) because the heat input is less than 10,000,000 BTU per hour.

### **APPLICABLE RULES/PERMIT CONDITIONS**

The facility's equipment is operating under Wayne County Air Permits C-6714 through C-6719 for:

Two sand mixers and a sand silo with a bag house  
Two coreless induction melters  
Two coreless induction furnace melters  
Sand mixers, a sand silo and a sand reclaimer with a baghouse  
A tumble blast unit with a dust collector  
Sand reclaimer with a dust collector

These permits were issued on January 4, 1985 and the special conditions are as follows:

1. NA – Drop sleeves are required when emptying dust hopper in closed containers. In the past the drop sleeves have been present, though I did not observe activities at the dust hopper during the onsite inspection.
2. Compliance – Exhaust stack from the baghouse is at least three feet above the top grade of the building. Visual inspections from the road show the stacks are at least three feet higher than the building. The stack was raised a few years ago when the company was received frequent odor complaints.
3. Compliance – Records kept as part of preventative maintenance program indicate inspections of dust collectors. A log is kept by the maintenance employee. Any maintenance activities are kept in a report that is attached to this report.

The facility operates three electric furnaces, with a capacity of 3,000 lbs, 2,000 lbs and 400 lbs. These furnaces are exempt from permitting Rule 282 (2)(a)(vi).

The facility appears to be subject to 40 CFR 63 ZZZZZ and Rule 949 for Iron and Steel Foundries Area Source. On September 30, 2019 I emailed this regulation to Mr. Tynan. I plan to follow-up with Mr. Tynan within the next month to discuss the applicable requirements and verify compliance.

#### MAERS REPORT REVIEW

NA

#### FINAL COMPLIANCE DETERMINATION

Northfield Manufacturing appears to be operating in compliance with all conditions of the Wayne County Permits C-6714 through C-6719.

NAME Jill J. Muller DATE 9/30/19 SUPERVISOR JK