

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

B364047665

FACILITY: Michigan Die Casting, LLC		SRN / ID: B3640
LOCATION: 51241 M-51 N, DOWAGIAC		DISTRICT: Kalamazoo
CITY: DOWAGIAC		COUNTY: CASS
CONTACT: Bradley Farver ,		ACTIVITY DATE: 01/22/2019
STAFF: Amanda Chapel	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT:		
RESOLVED COMPLAINTS:		

On January 22, 2019, AQD's Amanda Chapel (staff) conducted an unannounced air quality inspection of Michigan Die Casting located in Dowagiac, Cass County Michigan. The purpose of the inspection was to determine the facility's compliance with permit to install (PTI) 444-86D to install remelt furnace 1116 in place of remelt furnace 1108, 505-86B to add flux usage to two zinc melting pots, 405-96 for an 8 MMBtu/hr natural gas fired aluminum melting furnace, and 374-00 for an aluminum melting furnace in the R&D center and all applicable state and federal air regulations. The following will summarize plant operations and facility's compliance status.

The facility is an aluminum die casting and machining operation which purchased Premier Tool and Die and all existing equipment and transferred all applicable permits to their operation in September 2017. The facility currently has 4 active permits and is a minor source of air contaminants. It is located to the north of the city of Dowagiac in a mainly rural area. There have been no complaints received about the facility recently.

I arrived at the facility at about 1:00 pm. I drove by the facility, going north, and didn't observe any visible emissions from any of the stacks. The sky was overcast and it was beginning to precipitate freezing rain. I entered the facility, introduced myself to the woman at the front desk and stated I was there to do an air quality inspection. Mr. Brad Farver is the contact person for environmental compliance. He led me to a small conference room to the front of the office area.

We sat down and I explained that I would normally take a tour of the facility and we would do a paperwork review. I told him that there were currently 4 PTIs active at the facility. He said Michigan Die Casting has never used zinc and the melting pots permitted in PTI 505-86B had been removed by the previous owners. We discussed voiding that permit as the equipment was no longer located on site. We were able to determine that the furnace referenced in PTI 374-00 is called 1106 on site. It has a 1,000 lbs melt rate. Permit 405-96 refers to furnace 1104 which is still hooked up but is not operational since late 2017 or early 2018. Permit 444-86D is for furnace 1116. There are also 9 electric furnaces operational on site, 2 crucibles and 7 holding furnaces. These crucible and holding furnaces appear to be exempt under Rule 282(2)(a)(iv).

The site tour started with the raw material here. This where they store the raw material for melting. The material is stored in colored areas to delineate which type of aluminum it is. Each current operational furnace is able to melt one type of aluminum. Furnace 1116 was operational during the inspection. The furnace runs at about 1350 degrees and only runs 380 aluminum using pyroflux315. The facility estimates they use a 50 gallon drum of flux ever 2-3 months. This furnace runs 24/7. The finings and dross are sold as a byproduct. In this area there is furnace 1104 which is not operational and has not run for over a year. Furnace 1105 used to be in this area but was removed. The stack is still there. There are future plans to add a new furnace here.

The facility operates 14 die cast cells which can be changed to make a variety of 250 parts supplied by the facility. Most of the cells were in operation at the time of the inspection. The molten aluminum is poured into a electric holding furnace or crucible where a machine dips out the molten aluminum, it is injected into a mold, allowed to harden, removed by a robotic arm, cooled in a bath of water and rust inhibitor, and then stamped to separate the parts. These parts are taken to the machining area to be finished before being shipped to the purchaser.

The R&D furnace is used daily to melt aluminum and was in operation during the inspection. The plan is to take the furnace offline in 2-4 weeks for major rebuilding. In the meantime, the facility can melt aluminum ingots in the crucible type holding furnaces to use in the die cast cells. The facility was

melting only clean charge or materials generated in the facility. They do not use flux in this furnace. Any aluminum that is coated or may have oil, grease, or any other substance on it is shipped off site to be processed elsewhere.

Next, we went to the machining department. Here there are many milling, drilling, capping, and grinding machines to help finish the parts. These are all internally vented into the in-plant environment. These appear to be exempt under Rule 285(2)(l)(vi)(B). There is one grinder that has an internal Jet dust collector. This is cleaned maybe once per quarter. There was a plastic viewing hole and it did not appear to be even 1/10 full.

Next we went to the maintenance area to observe the three parts washers on site. The first two in the maintenance area had the lids open at the time of the inspection. I spoke to Mr. Farver about having the employees keep the lids closed. Neither appeared to be in use and there was no smell of solvent. The third, in the tool department, was larger. The lid was closed and it was in operation. Mr. Faver says that Safety Clean services the parts washers and he has requested that they apply the proper stickers be installed and have each lid labeled with "Close Lid When Not In Use".

There are two diesel generators on site and two electric generators. The first one is used for emergency lighting. It is about 1640 btu/hour and is tested for 35 minutes every week. The second diesel generator is in the fire pumphouse. It is a diesel 454 GM big block from the 60s. It is also tested once per week. Both the diesel generators appear to be exempt per Rule 285(2)(g). The associated electric generators are exempt because they emit no air contaminants.

We returned to Mr. Farvers desk so he could show me the records of the monthly melt rate. Since only furnace 1116 can melt 380 aluminum, all the 380 melted at the facility was in 1116. I asked him to format the records for a monthly melt rate, as required by permit 444-86D and email them to me when complete. Records of flux usage were not being kept at the time of the inspection. The limit on flux usage is 54 lbs/day. Since furnace 1104 was not operational and has not run for over a year, there were no records to review of flux usage. I also requested flux rate records be emailed. No records were reviewed from PTI 505-86B since the equipment is no longer on site. Nothing was reviewed for furnace 1105 since it is also no longer on site.

I thanked Mr. Farver for showing me around the facility. I left the site around 2:30 pm.

I received records (attached) of the monthly melted tonnage and flux usage for the facility on January 25, 2019. This is only required by permit 444-86D for furnace 1116 and 405-96 for furnace 1104 which is not operational currently. Since furnace 1116 can only melt aluminum 380, all the reported melted tonnage for 380 is attributed to furnace 1116. If the facility were to install additionally furnaces that can melt aluminum 380, the recordkeeping would need to be changed.

Additionally, permit 444-86D has a limit of 54 lbs/day of flux usage. The facility supplied purchase records of flux, not usage records as required. There was 1000 lbs of Pyroflux 315 purchased in April, and 500 pounds each of Pyroflux 355 and Pyroflux 350 in August. This averages out to 5.55 pounds of flux used per day. It is unlikely the facility is exceeding their permitted limit for flux. The records should be changed to reflect daily flux usage.

Facility appears to be in compliance with the permits issued. The recordkeeping should be changed to reflect daily flux usage.

NAME Aimee Chell DATE 1/25/19 SUPERVISOR RIL