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

B199143272

FACILITY: GM LLC Saginaw Metal Casting Operations		SRN / ID: B1991
LOCATION: 1629 N. WASHINGTON, SAGINAW		DISTRICT: Saginaw Bay
CITY: SAGINAW		COUNTY: SAGINAW
CONTACT: Renee Mietz , Env. Engineer		ACTIVITY DATE: 02/08/2018
STAFF: Gina McCann	COMPLIANCE STATUS:	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

I (glm) met with Ms. Renee Mietz, Senior Environmental Project Engineer and Mr. Jeffrey Hummel, Environmental Engineer, on February 7th and 8th, 2018, to perform a scheduled inspection of MI-ROP-B1991-2015b. Mr. Matthew Karl, Environmental Quality Analyst, Air Quality Division, accompanied the inspection on February 7th and Ms. Meg Sheehan, Environmental Quality Analyst, Air Quality Division, accompanied the inspection on February 8th. At the time of the inspection, the facility was in compliance with the appropriate state and federal air quality regulations.

General Motors, LLC – Saginaw Metal Casting (SMCO), is located at 1629 North Washington, Saginaw, Michigan. The facility operates an aluminum casting foundry for the production of engine blocks and heads for the automotive industry. The facility is permitted for a green sand aluminum line, precision sand aluminum line and semi-permanent molding aluminum lines. The site has pre-machining, sand handling and casting, aluminum melting, pouring, cooling, and cast finishing. There are also several backup generators utilized in emergency situations.

SMCO ceased the lost foam aluminum lines operations at the site in 2012. Additionally, 2 boilers that operated at the site and part of the former GM Global Energy and Utilities Services been decommissioned.

The facility has undergone changes in production activity since the last ROP issuance in 2015. PTI No. 36-12f was issued for new precision sand aluminum casting and new semi-permanent molding aluminum casting operations. Much of mold Line 6 has either been decommissioned or is in the process of decommissioning.

At the time of the inspection the following (25), twenty-five, units were not in operation. EU-6ML-EF-01, EU-6ML-EF-02, EU-6ML-EF-03, EU-6ML-EF-04, EU-6ML-DC-67, EU-6ML-DC-68, EU-6ML-GV-01, EU-6ML-GV-02, EU-ALUM-EF-01, EU-ALUM-EF-02, EU-ALUM-EF-03, EU-ALUM-EF-04, EU-ALUM-EF-05, EU-ALUM-EF-16, EU-ALUM-EF-18, EU-6CR-EF-07, EU-6CR-EF-08, EU-6CR-EF-09, EU-6CR-EF-10, EU-6CR-DC-69, EU-6CR-ISO-04, EU6ML-DC-01, EU-6ML-DC-66, EU-6ML-DC-77 and EU-6ML-DC-78. This area of the plant was blocked off and the units were being decommissioned. The facility will be sending a request to remove these units from the ROP, once decommission is finished.

Source-Wide Conditions
The facility is required to comply with the applicable provisions of 1994 PA 451, Section 324.5524, fugitive dust sources or emissions. The facility has a fugitive dust plan on file. An update to the plan was received by the Division on February 23, 2018.

The facility signed Administrative Consent Order (ACO) AQD No. 53-2014 on October 23, 2014, to resolve reported emission limit exceedances for particulate matter and VOCs based on failed emission testing report results. The ACO was terminated on December 7, 2016 upon request of the facility.

EUPSANDALUMINUM

This unit is the molten aluminum supply, which consists of two natural gas-fired aluminum melting/holding furnaces for aluminum/alloy production using "clean charge" with flux addition and drossing and degassing well (argon). An electrically heated launder system, vented in-plant, moves molten aluminum to the casting area.

This process was viewed both on February 7th and 8th, 2018. No pollution control equipment is associated with this emission unit.

NOx emissions are limited to 13.78 ton per year (tpy) based on a 12-month rolling time period as determined at the end of each calendar month. I reviewed records for the 12-month rolling time period beginning January through December for both 2016 and 2017. NOx emissions were 1.84 tpy for 2016 and 2.07 tpy for 2017.

Material usage is limited to 6 tons per hour for metal feed/charge rate based on a monthly average. I reviewed records for the 12-month rolling time period beginning January through December for both 2016 and 2017. Tons of metal fed/charged per hour ranged from 0.88 tph in March 2016 and 4.99 tph in January 2017.

Flux usage rate (total injection flux and broadcast flux) is limited to 11,216 pounds per year based on a 12-month rolling time period based at the end of each calendar month. I reviewed records for the 12-month rolling time period beginning January through December for both 2016 and 2017. The flux usage rate was 1620.06 lbs./yr. for 2016 and 1590.06 lbs./yr. for 2017.

The facility is required to maintain hours of operation as a melting furnace per special condition VI.1.a. Process/operational restrictions in the ROP limit the melting furnace to 5,300 hours per 12-month rolling time period. 1920 hours for 2016 and 1968 hours of operation for 2017.

A monthly and 12-month rolling time period, natural gas usage rate is required per special condition VI.1.b. The 12-month rolling time period usage for 2016 and 2017 were 72 MMCF and 78 MMCF, respectively.

Special condition VI.1.d. requires average, monthly, PM, PM10 and PM2.5 emissions recorded in pph. Records are kept in tons per month. For 2016 PM, PM10 and PM2.5 emissions were 0.47 tons per month and in 2017 they were 0.53 tons per month.

EU-PSANDPROCESS

This is a sand processing unit, which consists of a 220 ton new sand storage silo with bin vent filter that receives sand from a blower truck. The unit also consists of two, 30 ton, pre-reclaim sand silos, which receive process sand recovered in the facility. Sand from both silos is transported to two natural gas fired fluidized bed sand reclaim systems for cleaning and preparation of sand. GM SMCO staff refer to this unit as the thermal sand reclaim. The scrap remelt for this operation goes to an outside remelt supplier at this time.

Emissions from the thermal sand reclaim are controlled by two, 31,200 scfm fabric filter collectors, one for each sand reclaim unit. The facility monitors static pressure drop and hood temperature, daily, per the MAP approved in 2013. During the inspection I received printouts for January 8, 2018 through February 8, 2018. Static pressure drops were within the approved ranges and the hood temperature was maintained above 676C during times of operation. Presence or absence of visual emissions (VE) from the bin vent filters during loading of sand into the silo, is required annually. The last observation was May 3, 2017, with no VEs observed.

Special condition IV.1. requires a pressure drop range between 0.5 and 10 inches of water column ("W.C.). During the inspection I viewed the magnahelic gauges for each reclaim unit.

The west unit (Z-BH2) had a differential pressure of 3.23 "W.C. at 12:05 p.m. and the east unit (Z02-BH1) had a differential pressure of 1.96 "W.C.

New and recovered core sand material throughput is limited to 73,339 tons per year based on a 12-month rolling time period as determined at the end of each month. I reviewed 12-month rolling time period beginning January through December for both 2016 and 2017. Usage was 36,899.18 tpy for 2016 and 42, 312.33 tpy for 2017.

Special condition I.11. limits NOx emissions from this unit to less than 3.90 tpy, based on a 12-month rolling time period as determined at the end of each calendar month. NOx emissions for the 12-month rolling time periods ending December 2016 and December 2017 were 1.75 tpy and 2.23 tpy, respectively. PM, PM10 and PM2.5 monthly averages for 2016 and 2017 were at the permitted level of 0.13 pph.

A monthly and 12-month rolling time period, natural gas usage rate is required per special condition VI.1.a. The 12-month rolling time period usage for 2016 and 2017 were 34.96 MMCF and 44.63 MMCF, respectively.

EU-PSANDCOREROOM

This emission unit consists of a series of processes starting with sand handling and mixing where polyurethane resin is mixed with the sand. The mixed sand then goes to the one of six cold box core machines where dimethyl isopropaylamine (DMIPA) is used to cure the mixed sand. Emissions includes the use of a core release chemical, metal clear used during maintenance, final mold assembly and general core handling fugitive emissions.

Emissions from the sand handling and mixing are controlled through a 15,000 scfm cartridge collector. During the core making process, the six cold box core machines are ventilated to a cyclone and then a packed tower acid scrubber. Emissions from the maintenance process are controlled with a mist collector and are vented in-plant. Fugitive emissions from cylinder cleaning and heating by shot blast uses a 2,500 scfm cartridge collector, which is subsequently vented in-plant.

This unit is subject to Compliance Assurance Monitoring (CAM) requirements, because it has a control device and potential pre-control emissions of greater than the major source threshold levels for VOCs. The CAM plan monitoring requirements are for flow, differential pressure and pH on the acid scrubber. The facility measures pressure drop, scrubber flow, and pH and record every 15 minutes for an hourly average as an indicator of proper operation of the scrubber. The indicator range for pressure drop is 0.1 to 6 inches, pH is less than 4.5 and scrubber flow is greater than 190 gallons per minute (gpm). I viewed the scrubber readout panel during the inspection and pH was 3.80, flow was 215 gpm and differential pressure was 2.46 "W.C. at 12:50. The raw sand baghouse had a differential baghouse of 2.18 "W.C. at 13:00.

During the inspection I received printouts for January 8, 2018 through February 8, 2018. Static pressure drops, scrubber flow and pH were within the approved ranges.

Usage of DMIPA is limited to 481 tpy, based on a 12-month rolling time period as determined at the end of the month. The facility used 24.54 tpy for 2016 and 28.14 tpy for 2017.

VOCs are limited for each area in this process, based on a 12-month rolling time period as determined at the end of the month. 2016 and 2017 records were reviewed. The table below compares actual emissions with permit limits.

	Limit (tpy)	2016 (tpy)	2017 (tpy)
	22.00	11.07	12.69

Cold box core machines			
Fugitive emissions from core handling	8.80	4.87	5.59
Cold box core machine cleaning	14.17	4.42	3.87
Core box cleaning	1.02	0.30	0 (not used)

EU-PSANDCASTLINE

This emission unit is the cast line processes and consists of activities such as pouring and cooling of castings in the molds, mold cooing, and chill plate cleaning. Shakeout, or separation of cooled castings from the molds is also part of this emission unit. The processed is heated by a 10 MMBtu/hr natural gas-fired duct burner.

Emissions from the pouring and cooling activities are controlled through a 30,000 scfm cartridge collector followed by the 60,000 scfm regenerative thermal oxidizer (RTO). Shakeout emissions are heated by the duct burner and controlled through a 30,000 scfm fabric filter collector followed by the 60,000 scfm RTO. The facility has more than one RTO in place, but only RTO #3 is still connected. The other RTOs are for previous devices no longer in service.

This unit is subject to Compliance Assurance Monitoring (CAM) requirements, because it has a control device and potential pre-control emissions of greater than the major source threshold levels for VOCs and PM. The CAM plan monitoring requirements are for differential pressure on the fabric filter and temperature on the RTO. For the precision sand shakeout controlled by a 30,0000 scfm fabric filter followed by the RTO, the facility continuously measures the pressure drop as an indicator of proper operation of the dust collector. The indicator range is between 1.0 and 7.0 "W.C., except when a large number of filter bags have been replaced. At the time of the inspection the pressure differential was 1.0 "W.C. at 10:41. For the pouring, cooling, and shakeout process controlled by a 30,000 scfm cartridge collector followed by the RTO, the facility continuously measures the pressure drop, daily, as an indicator of proper operation of the RTO. The indicator range is greater than 1400F and a three-hour average may be used. At the time of the inspection the RTO temperature was 1449F.

NOx emissions are limited to 15.21 tpy and aluminum pouring is limited to 17,490 tons poured per year, based on a 12-month rolling time period as determined at the end of the month. 2016 and 2017 records were reviewed ending the month of December. Emissions were 1.17 tpy for both 2016 and 2017. Material usage for 2016 and 2017 were 9,278 tpy and 10,625 tpy, respectively. Natural gas usage is monitored/recorded monthly and 12-month rolling time periods as determined at the end of each calendar month for the RTO and duct burner in the emission unit. In 2016 the natural gas usage in the RTO was 58 MMCF and 50 MMCF in 2017.

EU-PSANDSCCSH

This emission unit is for the precision sand process and entails the solidification and casting cooling, which is enclosed ambient air cooling of castings and sand handling. The sand handling is primarily from shakeout in the form of broken cores and molds that is pneumatically transferred to the rotary drum. Scrap cores from EU-PSANDCOREROOM are also transported to the rotary drum for processing. Sand output from the rotary drum is then pneumatically transferred to the pre-reclaim sand silo of EU-PSANDPROCESS. Smaller amounts of granular sand from the core machines, cooling conveyor, and EUPSANDFINISH are also moved to the pre -reclaim sand silo by conveyor or by for truck in hoppers.

Emissions are vented to a 35,000 scfm fabric filter collector. This unit is subject to CAM requirements, because it has a control device and potential pre-control emissions of greater

than the major source threshold levels for PM. The CAM plan monitoring requirements are for differential pressure on the fabric filter. The facility continuously monitors the pressure drop and at the time of the inspection the differential pressure was 5.40 "W.C.

This process is restricted to less than 5,300 hours for a 12-month rolling time period as determined at the end of each calendar month. I reviewed records ending December for 2016 and 2017. PSANDSCCSH operated 2,841 hours in 2016 and 3,257 hours in 2017.

EU-FINISH
This emission unit is utilized by both the precision sand (PS) and semi-permanent molding (SPM) operations. This process removes excess metal and residual sand from the casting. Emissions are controlled by cartridge collectors with air flow rates of 12,800 scfm total for the deflash, decore, and degate enclosures from PS and SPM molding operations. There is a 1,500 sfm unit for the shot blast cabinet associated with the PS finishing. The self-contained water blast cabinet associated with PS finishing uses a mist eliminator which is vented in-plant.

We viewed each of these units during the inspection. The differential pressure for the deflas, decore and degate actions were 1.45 "W.C. and the shot blast cabinet unit was 2.04 "W.C. The MAP defines proper operating values, for both units, between 0.1-10.0 "W.C.

The facility maintains monthly average records for PM, PM10 and PM2.5. I viewed 2016 and 2017 records, which were below permitted values.

EU-SANDSEP
Internal aluminum scrap from EU-FINISH is collected in hoppers and transported to the sand separator for the removal of sand before the metal is used as "clean charge" feed in EU-PSANDALUMINUM. This unit has not operated since April 2015. The facility will be removing from the ROP. I did not view associated records.

EU-SPMALUMINUM
This emission unit is a natural gas-fired stack melter aluminum melting/holding furnace for aluminum/alloy production using "clean charge" with flux addition, drossing, and degassing well (argon). The melt rate is 5.5 ton per hour (tph) and 4.25 MMBtu/hr heat input rate in holding operational mode. The electrically heated launder systems are vented in-plant as well as the four electric ladle furnaces with degassing (argon) capability and flux addition.

We viewed this unit during both days of the inspection. We were able to see the ingots being gravity fed into the molten pool on day one and the second day the top of the melter was open preparing for additional charge.

Emissions from melting/holding furnace, including products of combustion and fluxing are vented to a 33,000 scfm fabric filter collector. Emissions from the launder system, ladle furnaces and holding furnace are released to the internal plant environment. Pressure drop is monitored daily at a minimum. During the inspection the pressure differential was 1.45 "W.C. at 13:00.

The ROP limits operating hours as a melting furnace to not more than 6,032 hours per 12-month rolling time period as determined at the end of each calendar month. I reviewed 2016 and 2017 records and hours were 4,996 and 4,954, respectively. NOx emissions data is maintained and determine on a 12-month rolling time period and restricted to 9.55 tpy, based on a 12-month rolling time period as determined at the end of each calendar month. Emissions were 2.58 tpy for 2016 and 2.28 tpy for 2017. PM, PM10 and PM2.5 monthly average, emissions, are maintained and were below permitted values for both 2016 and 2017.

Additionally, tons of metal fed/charged is limited to 5.5 tph based on a monthly average. Charge rates ranged from 1.26 tph in 2016 to 3.40 tph in 2017. Total flux usage (total injection flux and broadcast flux) are limited to 7,332 pounds per 12-month rolling time period. Total flux usage in 2016 was 547.56 pounds/year and 455.06 pounds/year for 2017. Natural gas usage was 30.64 MMCF and 40.47 MMCF for 2016 and 2017, respectively.

EU-SPMPROCESSAND

The 120 ton new sand storage silo with bin vent receives sand via blower truck and a 30-ton pre-reclaim sand silo receives process sand recovered in the facility. Sand from both silos is transported to the natural gas fired fluidized bed sand reclaim process system for cleaning and preparation of sand. From there, sand is transferred to the prepared sand silo.

Top core, scrap cores, broken cores and process sand collected from EU-SPMCASTLINE and EU -SPMCASTLINE4 and scrap cores and process sand from EU-SPMCOREROOM are collected in a bin/hopper and taken to a sand load out station for reclaim or returned to the process by the receiving dump chute of EU-SPMPROCESSAND for transport by conveyor to the hopper/storage silo of EU-SPMPROCESSAND.

PM emissions from these sand handling processes and EUSPMCASTLINE4 and sand handling transfer points including the pre-claim sand silo, sand transfer system, fluidized bed sand reclaim, and prepared sand silo in EU-SPMPROCESSAND are controlled by a single 34,000 scfm fabric filter collector. This control device is listed in the approved MAP for the site. The proper operating range is between 0.5"W.C. and 10 "W.C. I viewed this device during the inspection and the differential pressure was 2.94"W.C. and the hood temperature was 743C, both are within appropriate ranges.

NOx emissions were 0.76 tpy in 2016 and 0.11 tpy in 2017, below the permitted level of 1.18 tpy. Material limits restrict new and recovered sand throughput to less than 27,891 tons per 12-month rolling time period as determined at the end of each calendar month. The facility put through 11,046.43 tons in 2016 and 15,018.79 tons in 2017. The sand reclaim unit used 17.2 MMCF in 2016 and 2.3 MMCF in 2017. The static pressure drop and temperature are monitored daily.

EU-SPMCOREROOM

The core room processes include sand handling and mixing via both conveyor and pneumatic systems. Sand and two-part epoxyacryclic resin mixing occurs. Prepared sand is transported to and received into the central sand hopper and mixer located above the core machines. The core is made using a sulfur dioxide co-reactant injection system which supplies mixed sulfur dioxide for the three cold box core machines. Core box tooling maintenance process is included in this unit and includes the use of a core release chemical, metal cleaner, a high-pressure water wash and core box washing station. The high-pressure water was and core box washing station is also utilized by EU-PSANDCOREROOM. Scrap cores and process sand are placed in ins or hoppers and taken to a sand load out station for reclaim. Sand is added to the process by the receiving dump chute of EU-SPMPROCESSSAND. Fugitive emissions occur from storage of completed cores in a core buffer area that produces off-gassing emissions, which are released to the general ventilation system for the facility.

Emissions from the final sand transport, sand hopper, and mixer are controlled by a 5,000s scfm cartridge collector. Emissions from the core making machines are controlled by a cyclone and a packed tower caustic scrubber with a 20,000 scfm exhaust gas flow rate. I viewed both of these control devices during the inspection. I viewed the system stabilize with caustic, too. The flow was 497 gpm, the differential pressure was 2.53 "W.C. and the pH was 12.4 at 11:09. The cartridge collector had a differential pressure of 7.15 "W.C. at 11:17. The ROP requires the facilty to install, properly maintain and operate each of these control devices. The facility utilizes a MAP, which defines proper operating ranges for the cartridge collector to be between 0.1 and 10 "W.C. The acid scrubber has proper operating ranges defined between 0.1-12 "W.C.

for differential pressure, flow above 450 gpm and pH above 9.5. I viewed records from January 8, 2018 through February 8, 2018, the scrubber operated within proper operating ranges during this time period.

PM, PM10 and PM2.5 emissions are monitored and recorded a monthly average recorded. I viewed 2016 and 2017 records, which were below permitted levels. VOC emissions for the core box process is limited to 3.72 tpy, on a 12-month rolling time period as determined at the end of each calendar month. 2016 emissions were 1.66 tpy and 2017 were 0.75 tpy. Fugitive emissions from the core making process are limited to 4.96 tpy. Emissions were 2.21 tpy in 2016 and 3.004 tpy in 2017. The SO2 catalyst usage is limited to 307 tons per year. The facility used 174.36 tpy in 2016 and 232.69 tpy in 2017.

EU-SPMCASTLINE

This emission unit consists of three cast lines with a nominal maximum combined production rate of 106 castings per hour (2,460 castings per day) and a nominal maximum production rate of 53 castings per hour on any single casting line. Each line entails making a final mold, which includes mold and core assembly and mold heating with natural gas fired (16MMBtu/hr) burners/torches. Mold filling is conducted by gravity pour. The initial cooling and solidification of the molten metal occurs inside the mold. Extraction of the casting (including sand cores) from the steel mold is completed by the casting extraction unload robot. Top core and down sprue removal. Additional cooling and complete solidification occur in the casting solidification buffer area. Three identical modular units extended casting cooling in the cooling gargae. Two identical modular units include deflas, decore and degate. Finishing operations include three removal of excess metal and sand from the casting (EU-FINISH). Metal removed from the casting is collected and transported to thermal sand pre-reclaim silos via the pneumatic transport system and the scrap remelt (runner, riser and gating) for SPM go into the stack melter.

Coating emissions are controlled by a 10,000 scfm cartridge collector. Emissions from each cast line in sections 1 and 2 are controlled by three, 60,000 scfm fabric filter collectors. Combined emissions from section 3 of both cast lines and precision sand finishing operations are routed to a 12,800 scfm cartridge collector (EU-FINISH). Decoating emissions are routed to a 7,500 scfm cartridge collector and then vented to the in-plant environment.

This unit is subject to CAM requirements, because it has a control device and potential pre-control emissions of greater than the major source threshold levels for PM. The CAM plan monitoring requirements are for differential pressure on the (3) three, 60,000 scfm fabric filter collectors. The facility continuously monitors the pressure drop and at the time of the inspection the differential pressure was 2.23 "W.C. Proper operating range is between 0.1 and 10 "W.C. The differential pressure for the cartridge collector on castline 1 was 3.62 "W.C. with a proper operating range between 0.1 and 10 "W.C.

Tons of aluminum poured per year are limited to 19,412 tpy based on a 12-month rolling time period as determined at the end of each calendar month. The facility poured 9,259.51 tpy of aluminum in 2016 and 12,589.28 hours in 2017. This emission unit operated for 4,172 hours in 2017 and 2,257 hours in 2016. Operational restrictions on hours per 12-month rolling time period as determined at the end of each calendar month is restricted to 6,032 hours.

Natural gas usage for this unit was a combined 6.4 MMCF in 2016 and 14.3 MMCF in 2017. The facility maintains CO, PM, PM10 and PM2.5 monthly averages of emissions. I viewed 2016 and 2017 records which were below permitted values. NOx emissions for the off line mold prep is limited to 1.03 tpy based on a 12-month rolling time period as determined t the end of each month. NOx emissions for 2016 were 0.20 tpy and 0.32 tpy in 2017. NOx emissions for all three cast lines in section 1and 2, combined, including mold preheating were 0.13 tpy in both 2016 and 2017.

EU-SPMCASTLINE4

This emission unit is one carousel cast line with a nominal maximum production rate of 50 molds per hour. The cast line consists of three sections: Section #1: making a final mold; mold filling; initial cooling; extraction; and cut sprue. Making a final mold includes mold and core assembly and mold heating with natural gas fired 16 MMBtu/hr (total heat input rate) burners/torches. Mold filling is by gravity pour. Initial cooling and solidification of the molten metal occurs inside the mold. Extraction of the casting (including sand cores) from the steel mold is completed by the casting extraction unload robot. Core and down sprue removal. Additional cooling and complete solidification occur in the casting solidification buffer area.

Section #2: extended casting cooling in a cooling area and
Section #3: Deflash; Decore; Degate. Finishing operations include the removal of excess metal and sand from the casting.

Process and scrap sand generated from EU SPMCASTLINE4 is collected and transported as described in EU SPMPROCESSAND.

Emissions are controlled for section1 and section2 by (2) two 30,000 scfm fabric filter collectors. I viewed the magnehelics for each of these collectors during the inspection. The east baghouse had a differential pressure of 0.3 "W.C. and the west was 0.5 "W.C. Proper operating ranges are between 0.5 and 10 "W.C. Ms. Mietz said the bags had recently been changed on these units and was the cause for the low readings.

Tons of aluminum poured per year is limited to 12,288 tons per year based on a 12-month rolling time period as determined at the end of each month. This unit did not make its first pour until May 2017 and poured 6427.5 tons in 2017. NOx emissions from this unit, for 2017, were 0.035 tpy, which was below the permitted level of 1.41 tpy. It operated 2,685 hours for 2017, under the permitted restriction of 6,032 hours.

The facility will be applying for a permit change for this unit. They are removing one stack and it will be vented to one stack instead of two.

EU-PREMACHINING

This emission unit has multiple stations for machining to remove excess metal and for surface preparation, which includes the use of a coolant. The casting washing area uses water jets and a cleaning solution. The casting leak testing area uses compressed air.

Localize exhaust at each removal/prep machine uses a 2,000 scfm mist elimator, which is released to in-plant air. The localized exhaust at each casting washing machine uses a 2,000 scfm with mist eliminator, which is also released to general plant environment air.

No emission limits are required by the ROP for this unit. Fugitive VOC emissions on a monthly and 12-month rolling time period are required. The facility had records for both 2016 and 2017.

EU-MACHASM

This unit has multiple stations for machining to remove excess metal and for surface preparation (includes the use of a coolant); Casting washing uses water jets and a cleaning solution; Casting leak testing uses compressed air; dry machining and assembly operations.

Emissions are localized at each removal/preparation machine, utilizing a 2,000 scfm mist eliminator, released to general in-plant exhaust. Casting washing machine, utilizes a 2,000 cfm mist eliminator, released to general in-plant exhaust.

No emission limits are required by the ROP for this unit. Fugitive VOC emissions on a monthly and 12-month rolling time period are required. The facility had records for both 2016 and 2017.

FG-FACILITYPM

This flexible group covers the particulate emissions associated with the following units: EU-6ML-EF-01, EU-6ML-EF-02, EU-6ML-EF-03, EU-6ML-EF-04, EU-6ML-DC-67, EU-6ML-DC-68, EU-6ML-GV-01, EU-6ML-GV-02, EU-ALUM-EF-01, EU-ALUM-EF-02, EU-ALUM-EF-03, EU-ALUM-EF-04, EU-ALUM-EF-05, EU-ALUM-EF-16, EU-ALUM-EF-18, EU-6CR-EF-07, EU-6CR-EF-08, EU-6CR-EF-09, EU-6CR-EF-10, EU-6CR-DC-69, EU-6CR-ISO-04, EU-6ML-DC-01, EU-6ML-DC-66, EU-6ML-DC-77, EU-6ML-DC-78, EU-PSANDALUMINUM EU-PSANDPROCESS, EU-PSANDCOREROOM, EU-PSANDCASTLINE, EU-PSANDSCCSH, EU-FINISH, EU-SANDSEP, EU-SPMALUMINUM , EU-SPMPROCESSAND EU-SPMCOREROOM, EU-SPMCASTLINE, EU-SPMCASTLINE4, EU-PREMACHINING and EU-MACHASM.

At the time of the inspection the following (25), twenty-five, units were not in operation. EU-6ML-EF-01, EU-6ML-EF-02, EU-6ML-EF-03, EU-6ML-EF-04, EU-6ML-DC-67, EU-6ML-DC-68, EU-6ML-GV-01, EU-6ML-GV-02, EU-ALUM-EF-01, EU-ALUM-EF-02, EU-ALUM-EF-03, EU-ALUM-EF-04, EU-ALUM-EF-05, EU-ALUM-EF-16, EU-ALUM-EF-18, EU-6CR-EF-07, EU-6CR-EF-08, EU-6CR-EF-09, EU-6CR-EF-10, EU-6CR-DC-69, EU-6CR-ISO-04, EU6ML-DC-01, EU-6ML-DC-66, EU-6ML-DC-77 and EU-6ML-DC-78. This area of the plant was blocked off and the units were being decommissioned. The facility will be sending a request to remove these units from the ROP, once decommission is finished. Emission units associated with FG-6ML-ALMELT, FG-ALUM-HTSF, FG-ALUM-HTAO, FG-6ML-MOLDSAND FG-6ML-WASTESAND and FG-6ML-MOLDCNVYR have been removed.

PM is limited to 128.99 tpy based on a 12-month rolling time period as determined at the end of each calendar month. 2016 PM emissions were 22.63 tpy and 26.77 tpy in 2017. The ROP limits PM10 to 132.94 tpy based on a 12-month rolling time period as determined at the end of each calendar month. 2016 PM10 emissions were 19.34 tpy and 24.96 tpy in 2017. PM2.5 emissions are also limited to 132.94 tpy based on a 12-month rolling time period as determined at the end of each calendar month. 2016 PM2.5 emissions were 17.64 tpy and 23.26 tpy in 2017.

FG-EMERGENCYRICE

The facility has several emergency generators subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE). Title 40 of the Code of Federal Regulations (CFR), Part 63, Subpart ZZZZ (40 CFR 63.6580 -6675). The engines are regulated as existing compression (CI) emergency RICE with a maximum site rate of less than 500 brake horse power (HP) (EU-FIREPUMP1, EU-FIREPUMP2) and greater than 500 brake horse power (HP) (EU-RWTFPH, EU-PATTERNSHOP) located at a Major Source of HAP emissions.

Requirements for each engine include operating less than 50 hours per year in non-emergency situations. According to the 2017 quarterly audit spreadsheet provided by the facility, all units operated under the required hours for maintenance purposes. The units did not appear to operate for an emergency situation. Oil changes and maintenance appear to be appropriate.

At the time of the inspection, the facility appeared to be in compliance with MI-ROP-B1991-2015b and applicable state and federal regulations.

CC: Mathew Karl, AQD
Meg Sheehan, AQD

NAME Gina L. McCann DATE 3/20/18 SUPERVISOR C. Hare