

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

N581464183

<b>FACILITY:</b> ASAMA COLDWATER MANUFACTURING, INC.		<b>SRN / ID:</b> N5814
<b>LOCATION:</b> 180 ASAMA Parkway, COLDWATER		<b>DISTRICT:</b> Kalamazoo
<b>CITY:</b> COLDWATER		<b>COUNTY:</b> BRANCH
<b>CONTACT:</b> David Sutherland , Sr. Manager, Human Resources		<b>ACTIVITY DATE:</b> 06/23/2022
<b>STAFF:</b> Amanda Chapel	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b>		
<b>RESOLVED COMPLAINTS:</b>		

**Background:**

In October 2012, EGLE Air Quality Division (AQD) made a written determination that Asama Coldwater Manufacturing, Inc (ACM) a grey iron foundry located at 180 Asama Parkway, Coldwater, MI and an adjacent core manufacturing facility, Gokoh Coldwater, Inc. (GCI) located at 100 Concept Drive, Coldwater MI were a single major stationary source under the Renewable Operating Permit (ROP) program. The facilities were issued ROP-N5814-2015 on 1/14/15 with two sections.

During the renewal 2020 ROP period, ACM and GCI submitted documentation showing there were no common operational controls and all other business functions were separate. As a result, EGLE AQD reversed the original determination and concluded that ACM and GCI were, in fact, separate sources under the ROP program. The ROP MI-ROP-N5814-2021 was issued on July 6, 2021 containing only requirements for ACM. This was used as the basis for this inspection.

**Inspection:**

On June 23, 2022, AQD Air Quality Division's (AQD) Amanda Chapel (staff) completed an unannounced air quality inspection of ACM located at 180 Asama Parkway, Coldwater, MI Calhoun County. The purpose of this inspection was to verify the facility was in compliance with MI-ROP-N5814-2021, 40 CFR Part 63, Subparts A and EEEEE, 40 CFR Part 63, Subpart MMMM, and all other applicable air quality rules and regulations. The last AQD inspection was on 6/23/2020 and the facility was in compliance at the time.

ACM operates two grey iron foundries that produce brake components which are subject to 40 CFR Part 63, Subpart A and EEEEE National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries. The existing George Fischer (GF) foundry is named after its manual pour molding line, commenced operation in 1997. The newer, DISA foundry is named after its automated pour molding line, commenced operation in 2007. ACM uses green sand molds comprised of a combination of western and southern bentonite clays as well as sea coal as a binder. The facility has also installed two brake rotor coating lines that are subject to 40 CFR Part 63, Subpart MMMM, metal Part Coating Operation NESHAP.

Mr. John Glant is ACM EHS Manager. He and Mr. David Sutherland walked me around the facility. The George Fischer and DISA foundries were in operation during the inspection. All air pollution equipment was running at the time of the inspection and the foundry was operating at full capacity.

**EU-GFMELTPOUR (formerly EUMPCC-S1)**

This emission unit consists of two electric induction furnaces with an average daily melting capacity of 8 tons/hour and casting and cooling equipment. Emissions are controlled with a 49,000 cfm #GF608, four-cell baghouse that is equipped with bag leak detection (BLD) equipment. The BLD system is equipped with an alarm that is set and locked so it cannot be adjusted by foundry staff. During the inspection, it read 2.0 pA. An audible alarm calibrated to 60% and 80% of scale with a 3-second alarm delay.

Each cell has a dedicated photohelic differential pressure gauge that are calibrated annually. During the inspection, the readings from the gauges were recorded; NE read 3.0", SE read 4.0", SW read 5.5", and NW read 6". All the photohelic gauges at the facility were calibrated on October 15, 2021. The baghouse and weekly and monthly PMs which are completed by foundry staff. Visolite readings are done approximately monthly and broken bags changed as needed. Visible emissions readings, either Method 22 or Method 9, are performed daily or bi-shift, depending on the foundry. The differential pressure is checked daily during the walkaround PM checklist.

Testing performed June 22-25 and July 14-17, 2020 showed the following results.

Pollutant	Limit	Time period/ Operating Scenario	Testing Result
CO	57.5 pph	Hourly	24.2 pph
PM	0.005 gr/dscf exhaust gases or 2.1 pph	Hourly	0.02 pph
VOC	10.0 pph	Hourly	6.4 pph

The furnace is tapped manually by employees, the ladle is then guided over by hand to the pouring station. The molds are poured by hand beneath a hood until the ladle is empty and then it is guided back to be filled again. While the one furnace was being tapped, the other furnace was being loaded with scrap for melting.

The scrap storage area was also observed during the walk through. It was active and in use as the foundry was operational. Scrap is stored indoors in sorted bins of pig iron, clean scrap, and internal returns. The scrap is not preheated before being loaded into the furnace. A magnet is used to bring over the scrap and load a cart which is then used to fill the furnace with the scrap before the melting process begins.

**EU-GFSANDSYS (formerly EU-SANDSYSTEM-S1)**

This emission unit consists of green sand mold making, shakeout, and sand processing equipment. Sand, bentonite clay, water, seal coal, and return sand is used to produce molds for the GF foundry. Emissions are controlled by a 65,000 cfm pulse jet #GF610 baghouse that is equipped with BLD equipment. During the inspection, the photohelic differential pressure gauge read 7.8". The BLD system read 15.2 pA during the inspection. Similar to the EU-GFMELTPOUR, this BLD system is equipped with the same percentage alarms and alarm delay.

Testing performed June 22-25 and July 14-17, 2020 showed the following results.

Pollutant	Limit	Time period/ Operating Scenario	Testing Result
CO	7.5 pph	Hourly	1.3 pph
PM	0.005 gr/dscf exhaust gases or 2.8 pph	Hourly	0.059 pph
VOC	6.0 pph	Hourly	2.2 pph

For EU-GFMELTPOUR and EU-GFSANDSYSTEM, the facility submitted examples of the weekly readings that are taken for all the George Fischer foundry elements for a week in every month from January 2020 to May 2022. These are considered to be a random, representative sample of the recordkeeping at the facility. All emission units that are in the GF foundry are recorded on the same sheet with the same frequency.

Bag leak detection is installed on the GF sand system. According to the submitted O&M plan, readings are recorded daily, once per shift. The exhaust stacks are observed daily, while operating, during daylight hours, for at least six minutes. Instructions indicate that if dust is noticed, to notify EQS. On the day of the example log sheets, there were no emissions noted.

At least 6 of the sheets provided had "NA" and a line down the page where data should have been recorded about the photohelic information including 7/22/20-7/28/20, 9/9/20-9/15/20, 4/14/21 – 4/20/21, 10/27/21-11/2/21, 1/12/22-1/18/22, and 4/27/22 – 5/3/22. It was confirmed with the facility that these were for the second shift, which has not been running. The facility has added a check box at the time to mark if the operation is not currently running during the check. This should eliminate confusion moving forward.

**EU-SHOTBLAST (formerly EUSHOTBLAST-S1)**

Emission unit consists of a shot blast machine that is equipped with a mechanical pre-cleaner. Emissions are controlled by a 7,500 cfm pulse jet #GF603 baghouse that is equipped with BLD

equipment. During the inspection, the equipment was in operation and the photohelic differential pressure gauge was observed at 5.0". The BLD system read 6.1 pA during the inspection. Similar to above, the BLD system is set with the same alarm set points with an alarm delay of 20 seconds.

All stacks in GF foundry have a daily six-minute visible emissions check. EHS staff provided the GF and DISA baghouse photohelic logs. Daily photohelic readings are taken at least once per shift. If the photohelic gauges are reading outside the expected ranges, the EHS manager is to be notified.

#### **FG-RULE290 (formerly FG-RULE290-S1)**

Emission unit consists of one conveyor (EUCONVEYOR) used for as a casting cooling vibratory conveyor system in the GF foundry that is covered and vents to the 28,000 cfm pulse jet #437 baghouse that is equipped with BLD equipment. During the inspection, this was described as the baghouse that controls the Didion drum which is part of the finishing process.

The conveyor was in operation at the time of the inspection and the photohelic differential gauge read 7". The BLD system is equipped with an alarm system and read 28.3 pA during the inspection.

#### **EU-DSMELTPOUR (formerly EU-MP-S1)**

Emission unit consists of two electric induction furnaces with a 10-metric ton holding capacity each and a monorail pouring system with three ladles. According to previous inspection reports, the average daily melting capacity is about 16 tons/hour. Emissions are controlled by the 37,500 cfm pulse jet #DS602 baghouse that is equipped with BLD equipment. Both furnaces were in operation during the inspection. Similar to the other BLD systems on site, the system is equipped with an audible alarm at 60% and 80% with an alarm delay.

During the inspection, the fan amperage on the #DS602 baghouse was 121 motor amps. The BLDS read 21.3 pA and the differential pressure was 3.5". Calibration date on the differential pressure gauge was October 15, 2022.

Testing performed June 22-25 and July 14-17, 2020 showed the following results.

<b>Pollutant</b>	<b>Limit</b>	<b>Time period/ Operating Scenario</b>	<b>Testing Result</b>
<b>PM10</b>	<b>0.30 pph</b>	<b>Hourly</b>	<b>0.24 pph</b>
<b>VOC</b>	<b>5.28 pph</b>	<b>Hourly</b>	<b>1.32 pph</b>

CO	44.55 pph	Hourly	7.15 pph
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The facility submitted examples of the weekly readings that are taken for all the DISA foundry elements. All emission units that are in the DISA foundry are recorded on the same sheet with the same frequency.

Bag leak detection is installed on the DISA melt pour system. Readings are recorded daily, once per shift. Other readings taken include fan amperage, differential pressure, and visual inspection of damper position. The exhaust stacks are observed daily, while operating, during daylight hours, for at least six minutes. Instructions indicate that if dust is noticed, to notify EQS. On the days of the example log sheet, there were no emissions noted.

#### EU-DSCOOLSHAK (formerly EU-MCS-S1)

This emission unit consists of an automated mold cooling conveyors and automated sand shakeout lines, including a flat deck shakeout system. Emissions are controlled by a 61,200 cfm pulse jet #DS606 baghouse equipped with a BLD alarm system and a regenerative thermal oxidizer (RTO) installed in July 2013 under an AQD administrative consent order No. 14-2013 and PTI No. 28-06B. The duel-bed RTO switches over every 3 minutes. The baghouse is a single cell baghouse with a magnehelic pressure differential gauge. During the inspection, the differential pressure reading was 7.1", the fan amperage was 127 motor amps, and BLD read 137.2 pA.

A continuous monitoring system (CEMS) continuously monitors and records VOC emissions which is assumed to equal the VOHAP emissions and calculates a 3-hour rolling average VOHAP concentration to determine compliance with 40 CFR 63.7690(a)(10). At the time of the inspection, the CEMs was reading the following: 3.4 ppmv instantaneous, 2.8 one-hour average, 3.0 ppmv 3-hour rolling, 1382 deg F RTO chamber, 2.3 inches of water differential pressure at the inlet, and 11 inches of water differential for the outlet pressure. The VOHAP concentration is 15% of the allowable limit in the NESHAP Subpart EEEEE.

Testing performed June 22-25 and July 14-17, 2020 showed the following results.

Pollutant	Limit	Time period/ Operating Scenario	Testing Result
Volatile Organic HAP (VOHAP)	A flow-weighted average of 20 ppmv	Hourly	3 ppmvd (3-hour avg during inspection)
PM10	2.47 pph	Hourly	1.01 pph
VOC	15.49 pph	Hourly	2.24 pph

CO	62.70 pph	Hourly	12.4 pph
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The facility is tracking all VOC as VOHAP to satisfy the requirement to track the 3-hour average VOHAP concentration using the CEMS. EHS personnel and the facility’s consultant provided the PM maintenance sheets that are kept daily at the facility for tracking purposes. They check the CEMS unit, computer, record the 3-hour VOC average, RTO temperature, and other factors once per shift. The CEMs unit logs an instantaneous, 1-minute, and 3-hour VOC average.

The facility is using VOC as VOHAP as a worst-case scenario as it’s unlikely that all the VOC being emitted are HAPs. Stack test emission factors were provided from the 2020 stack test results. Daily readings are recorded for the fan motor amperage, differential pressure, and the visual inspection of the damper position.

**EU-DSMOLDSAND (formerly EU-SS-S1)**

This emission unit consists of vertical molding and related sand handling equipment. The emissions are controlled by a 56,900 cfm pulse jet #DS608 baghouse equipped with BLD equipment. This is a single cell baghouse with a magnehelic differential pressure gauge. During the inspection, the pressure drop was 5.1”, fan amperage was 168 motor amps, and the BLD read 7.2 pA. The BLD is equipped with an alarm, similar to the other baghouse settings but has an alarm delay of 90 seconds.

Testing performed June 22-25 and July 14-17, 2020 showed the following results.

Pollutant	Limit	Time period/ Operating Scenario	Testing Result
PM10	2.3 pph	Hourly	0.51 pph
VOC	4.0 pph	Hourly	0.43 pph

Records show daily readings are taken for fan motor amperage, differential pressure, and a visual inspection of the damper position. The high and low acceptable readings are noted and there are instructions to notify EQS if anything is above 8.0” H2O for the differential pressure readings.

**EU-DSCOOLSHOT (formerly EU-CCFBACK-S1)**

This emission unit consists of the back section of the casting cooling conveyors and a shot blast machine for the DISA foundry. Emissions are controlled by a 65,360 cfm pulse jet #DS604 baghouse that has one cell and is equipped with a magnehelic pressure differential gauge. During

the inspection, the pressure drop read 6.1", fan amperage was 167 motor amps, and the BLD system read 97.6 pA. The BLD system is the same as the #DS608 baghouse.

Testing performed June 22-25 and July 14-17, 2020 showed the following results.

Pollutant	Limit	Time period/ Operating Scenario	Testing Result
PM10	2.64 pph	Hourly	1.87 pph

Records show daily readings are taken for fan motor amperage, differential pressure, and a visual inspection of the damper position. The high and low acceptable readings are noted and there are instructions to notify EQS if anything is above 8.0" H2O for the differential pressure readings.

#### **EU-EMERGEN1 (formerly EU-EMERGEN-S1)**

This emission unit consists of a 500 kW Cummins brand, diesel-fired, emergency power generator that was installed with the new DISA foundry. This emergency generator is subject to 40 CFR Part 60, Subpart IIII. Preventative maintenance is done by an outside contractor on an annual basis.

A maintenance checklist and hours log is posted in the generator containment. Staff stated the generator is tested for 10-20 minutes every Monday. The non-resettable hours meter read 606.3 hours at the time of the inspection. During the inspection, the facilities manager called the fuel supplier. The fuel supplier, Warner Oil Company stated that the fuel was ultra-low sulfur diesel fuel which is 15% ppm or less of sulfur.

#### **EU-EMERGEN2 (formerly EU-EMERGEN2-S1)**

This emission unit consists of a 50 kW natural gas fired emergency power generator that was installed with the existing foundry and also supplies power to the paint lines, as needed. The emergency generator is subject to 40 CFR Part 63, Subpart ZZZZ based on the installation date. Similar to the other engine, the engine is serviced by an outside vendor on an annual basis. The non-resettable hours meter read 318.1 hours at the time of the inspection.

During the inspection, it was recommended that the recordkeeping be updated to include if the engines ran as testing, for maintenance, or during an emergency.

#### **FG-GFFOUNDRY (formerly FG-FOUNDRY-S1)**

Flexible group that includes two emission units: EU-GFMELTPOUR, EU-GFSANDSYS.

#### **Emission Limits**

Pollutant	Limit	Time period/ Operating Scenario	Records
PM	19.4 tpy	12-Month Rolling	0.11 tpy in July 2021
CO	156.0 tpy	12-Month Rolling	15.8 tpy in July 2021
VOC	38.4 tpy	12-Month Rolling	7.0 tpy in July 2021

### Material Limit

Material	Limit	Time Period	Records
Metal	Metal melt rate shall not exceed 48,000 tons per year.	12-Month Rolling	10,490 Tons 12-Mon Rolling in July 2021
Hours	7,872 hours	12-Month Rolling	2,028 Hours 12-Mon Rolling in May 2021

### FG-COLDCLEANERS (formerly FG-COLDCLEANERS-S1)

During the last inspection the facility provided a spreadsheet including the cold cleaners in the facility, serial numbers, model numbers, installation information, and air density interface. There are two cold cleaners that contain mineral spirits located in the foundry maintenance area and the M/C tool room. Two non-VOC cleaners are in the tool preset area and in the fork life maintenance area.

### FG-RULE290 (formerly FG-RULE290-S1)

FG-RULE-290 is used for EU-CONVEYOR, a casting, cooling, vibratory covered conveyor that is ventilated through a 28,000 cfm dust collector. The calculations use an EPA emission factor for grey iron foundry emissions for PM10, filterable. The particulate is comprised of residual molding sand left on castings being transported. There are no toxics associated with the sand.



Calculations show that controlled emissions from this conveyor are between 1.0 lbs/month and 1.5 lbs/month. This is well below the allowed 500 lbs/month in Rule 290.

#### FG-DSFOUNDRY

All emission units of the new expansion foundry: EU-DSMELTPOUR (EU-MP-S1), EU-DSCOOLSHAK (EU-MCS-S1), EU-DSMOLDSAND (EU-SSS1), EU-DSCOOLSHOT (EU-CCFBACK-S1)

#### Emission Limits

Pollutant	Limit	Time period/ Operating Scenario	Records
PM10	27.0 tpy	12-Month Rolling	12.9 tpy in May 2021
CO	375.5 tpy	12-Month Rolling	45.6 tpy in May 2021
VOC	86.6 tpy	12-Month Rolling	14.9 tpy in May 2021
Opacity	20% or 27%	6-min average	Checked daily

#### Material Limits

Material	Limit	Time Period	Records
Metal	Metal melt rate shall not exceed 115,500 tons per year.	12-Month Rolling	64,835 tpy 12-Mon Rolling in May 2021

The facility checks the span gas bottles, air dryer, CMEDAS software including alarm software, analyzer, data logging, and RTO. The facility previously provided an outline of their scrap certification plan that is in place on site.

#### FGCAMUNITS (formerly FGCAM\_UNITS-S1)

This emission unit contains EU-GFSANDSYS, EU-DSCOOOLSHAK, EU-DSMOLDSAND, and EU-DSCOOOLSHOT. The facility is monitoring and recording daily pressure drop readings, daily non-certified visible emissions checks, and daily bag leak detection records.

CEMS daily records were submitted as part of the records review. The facility is tracking the pressure drop once per shift and they complete daily emissions recordings once a day during first shift. Noted during the inspection, the facility has bag leak detection on the baghouses at the facility. The picoamps are monitored continuously.

#### **FGPAINTLINES (formerly FG-COATING-S1)**

The facility uses an excel spreadsheet to track emissions and coating content at the facility. The volume percent of non-volatile materials, weight percent of HAP, density, VOC + exempt, VOC – exempt, and pound HAP per gallon of coating are contained in the spreadsheet for coatings used at the facility. The chemical composition of the coating used is listed out in the spreadsheet.

Gallons of GEOMET paint used is being tracked by line. October 2020 showed the highest amount of coating used on any line which was 535 gallons. The highest 12-month rolling amount of coating used on any line was 2.2 tons on line 2 in May 2021. Total 12-month rolling VOCs calculated across both lines showed the highest number of VOCs emitted was 4.05 tons in May 2021, which is below the 10 ton limit.

The facility is also tracking the HAP content of the coatings used. Highest monthly HAP total is 261.8 pounds in October 2020 and highest 12-month rolling HAP total was 1.29 tons in May 2021.

#### **FGMETALLIC (formerly FG-SOURCE-S1)**

There are no other coating lines on site and emissions calculations from FGPAINTLINES show compliance with the limits in the ROP.

#### **FGMACTMMMM (formerly FG-MACTMMMM-S1)**

The facility submitted records showing the determination of the HAP content and density of the GEOMET coating used. The FGMACTMMMM tab shows the compliance option chosen by the facility. They use compliant materials to meet the MACT requirement. The limit for coatings is less than 1.9 pounds of HAP per gallon of coating solids. Submitted calculations show the facility is at 1.71 pounds HAP per gallon of coating solids, which is compliance with the MACT limit.

#### **FGGRINDERS**

This emission unit contains grinders 1 and 2 which were installed in 2018 under PTI 184-17. These were rolled into the most recent ROP. The facility submitted records showing the pressure drop is being checked, daily, on the DISA Baghouse checklist. Per the on-site inspection, the pressure

drop is being monitored constantly while the grinders are running and recorded by hand once per day.

#### FGMACT5E\_Existing

This emission unit consists of EU-GFMELTPOUR. The facility provided the records for FGGFFOUNDRY to show continuous compliance with the MACT emissions requirements. The baghouse is equipped with a bag leak detection device that continuously monitors the PM loading in the baghouse. The facility undergoes testing every 5 years to show compliance with the PM limit. Daily visible emissions readings are taken during first shift when the foundry is running.

#### FGMACT5E\_New

This emission unit consists of EU-DSMELTPOUR and EU-DSCOOLSHAK. The facility provided records for FGDSFOUNDRY to show compliance with the MACT emission limits. The CEMS tracks the Volatile Organic HAP (VOHAP) emissions as VOCs on a 3-hour average. This is monitored continuously. The baghouse is equipped with a bag leak detection device that continuously monitors the PM loading in the baghouse. The facility undergoes testing every 5 years to show compliance with the PM limit. Daily visible emissions readings are taken during first shift when the foundry is running.

The facility appears to be in compliance with the requirements found in the MI-ROP-N5814-2021 and all other applicable state and federal air regulations.

NAME *Amanda Cross*

DATE 8/24/22

SUPERVISOR *R/L* 8/25/22