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

A393462303

FACILITY: Great Lakes Castings LLC		**SRN / ID:** A3934
LOCATION: 800 N. Washington Ave., LUDINGTON		**DISTRICT:** Cadillac
CITY: LUDINGTON		**COUNTY:** MASON
CONTACT: Gordon (Gordy) Anderson , EHS Supervisor		**ACTIVITY DATE:** 03/24/2022
STAFF: Caryn Owens	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: On-Site Scheduled Inspection and Records Review		
RESOLVED COMPLAINTS:		

On Thursday, March 24, 2022, Caryn Owens of the Department of Environment, Great Lakes, and Energy (EGLE) – Air Quality Division (AQD) conducted a scheduled, unannounced on-site field inspection and records review of Great Lakes Castings LLC (GLC) (SRN: A3934) located at 800 North Washington Avenue, Ludington, Mason County, Michigan. The site is located on the east side of North Washington Avenue, approximately 1/10 mile north of East Tinkham Avenue and consists of one main building in the central portion of the site. The surrounding area to the facility consists of a school adjacent to the facility to the south, and some commercial facilities and residential housing north of the facility. The remainder of the surrounding area is residential or vacant land.

The field inspection and records review were to determine compliance with the Renewable Operating Permit (ROP) MI-ROP-A3934-2015. The site is currently an area (a synthetic minor) source for hazardous air pollutants (HAPs), and subject to the following National Emission Standard for Hazardous Air Pollutants (NESHAP): for Iron and Steel Foundries in Area Sources 40 CFR Part 63, Subpart ZZZZZ; and for Stationary Reciprocating Internal Combustion Engines in 40 CFR, Part 63, Subpart ZZZZ (RICE MACT). Additionally, the following emission units are subject to federal Compliance Assurance Monitoring (CAM) Rule in 40 CFR Part 64: EUHUNTERSAND, EUHUNTER, EUDISA, EUCLEANING, and EUCUPOLA. GLC submitted a ROP Renewal Application to AQD and was received by the Cadillac District Office on March 10, 2020.

Summary:

The activities covered during the field inspection and records review for the facility indicates the facility was in compliance with ROP MI-ROP-A3934-2015 and no additional actions are necessary at this time. Specific permit conditions that were reviewed are discussed below.

On-site Inspection:

At the time of the inspection, I signed in and met with Mr. Gordon Anderson, the EHS Supervisor and Ms. Christy McNamee, the Safety Manager, who escorted me throughout the facility. I had general personal protection equipment (PPE) on, which included hard hat, safety glasses, hearing protection, steel toe shoes, and a flame-resistant (FR) jacket.

GLC is a gray iron foundry that produces cast iron products. The major production operations are raw material handling and preparation, mold and core production, metal melting, pouring and cooling, and casting finishing/heat treating. Molten iron is produced in a cupola controlled with an afterburner, wet cap, quencher, venturi scrubber and demister. The molten metal is stored in a holding furnace. Green sand molds are produced on two separate mold lines, a Hunter and a DISA line which are controlled by baghouses and scrubbers. The molten metal is poured in the Hunter and DISA lines from portable ladles. The molds utilize shell and cold box cores which are also produced on-site. Finishing operations at the facility primarily consist of three Rotoblast (shot blasting) units.

Prior to entering the facility, I observed that the cupola was operating (observed a substantial water vapor plume from the stack). During the field inspection the weather conditions were overcast and misting rain, with calm winds from the north-northeast about 0-5 miles per hour, and approximately 38 degrees Fahrenheit. I observed the all the emission units listed in the ROP, which are discussed in more detail below in each section of this inspection report.

During the inspection I observed the raw data from the monitoring systems for the cupola, and the pressure drops of each baghouse. The data recorded from the Cupola, baghouses/scrubbers, and pH monitor is addressed below in each section.

The facility is claiming the following exemptions at the facility:

- Three metal natural gas-fired heat ovens with less than 10,000,000 Btu/hr input meets exemption Rule 336.1282 (2)(b)(i).
- One 1,000 gallon propane storage tank meets exemption 336.1284(2)(b).

- Gas fired air make-up and Heating, Ventilation, and Air Conditioning (HVAC) Units with less than 10,000,000 heat input meets exemption Rule 336.1282(2)(b)(i).
- An existing Spark Ignition emergency generator engine with less than 500 horsepower meets exemption 336.1285 (2)(g), this emission unit is covered in the ROP.
- A rust inhibitor application system, the pattern making process, the shell core machines, and core wash area meet exemption Rule 336.1290, but this exemption has recordkeeping requirements, and is discussed in a short paragraph below.

Source Wide Conditions:

I. Emission Limits:
HAPS emissions are limited to 10 tons per individual HAP and 25 tons aggregate HAPS. Compliance with these limits is demonstrated through calculation of emissions based on emission factors associated with iron and sand binder usage rates. Records of HAPS emission over the last 12 months are attached. The most prominent individual HAP emitted by the facility is Benzene. Emissions of Benzene over the last 12 months total 3.045 tons per 12-month rolling time period. Total HAPS for the facility total 12.69 tons per 12-month rolling time period.

Opacity is also limited to 20% from any building. Testing for this is required once every six months and was completed December 30, 2021 and demonstrated compliance.

II. Material Limits:
There are no material limits associated with Source-Wide Conditions.

III. Process/Operational Restrictions:
The facility has a written scrap procurement plan that follows the mercury scrap management option of not accepting scrap that contains motor vehicle scrap. Compliance with this plan is required to be certified and reported semi-annually. The most recent reporting was received by AQD for the period July 1, 2021 through December 31, 2021. The report and certification were submitted in a timely manner.

IV. Design/Equipment Parameters:
There are no design limits associated with Source-Wide Conditions.

V. Testing/Sampling:
Testing for fugitive emissions (opacity) from all buildings is required once every six months. Testing was performed December 30, 2021 and demonstrated compliance.

VI. Monitoring/Recordkeeping
Records regarding HAP emission calculations and scrap procurement and segregation are being kept by the facility and demonstrate compliance with applicable standards. A report regarding this is submitted every six months per the Area Source Iron and Steel Foundry Area Source MACT (40 CFR Part 63, Subpart ZZZZZ).

VII. Reporting:
Semi-annual deviation reports, annual certifications of compliance and MACT reports were reviewed and documented as they were received. The required reporting was submitted in a timely and correct manner.

VIII. Stack/Vent Restrictions:
There are no specific stack parameters for Source-Wide Conditions.

IX. Other Requirements:
Malfunction Abatement Plans (MAP) are required for EUCUPOLA, EUCOLDBOXCORE, EUHUNTERSAND, EUDISASORM, FGDUSTAR, and FGCLEAN&FINISH. Plans for each have been developed and copies are on file with the AQD Cadillac District Office. These plans have been recently updated and submitted with the ROP Renewal Application. AQD reviewed and approved the plans May 12, 2020.

EUCUPOLA: Cupola and associated demister, afterburner, quencher, and venturi scrubber, metallic scrap storage area, coke storage area, and electric holding melting furnace. During the inspection of EUCUPOLA, the Cupola was on operating on blast.

I. Emission Limits:
The emission unit currently has the following emission limits:

Pollutant	Limit	Highest Reported Record

Particulate Matter (PM):	50.8 tons per year (tpy)	25.0 tpy
PM:	1.4 pounds/ Ton of metal charged	0.79 pounds/ Ton of metal charged
PM:	28 pounds per hour	12.50 pounds per hour
PM:	0.25 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis	0.145 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis
PM-10:	39.2 tpy	23.7 tpy
PM-10:	1.08 pounds/ Ton of metal charged	0.925 pounds/ Ton of metal charged
PM-10:	21.6 pounds per hour	14.39 pounds per hour
Sulfur Dioxide (SO2):	54.4 tpy	0.06 tpy
SO2:	1.5 pounds/ Ton of metal charged	0.0032 pounds/ Ton of metal charged
SO2:	30.0 pounds per hour	0.191 pounds per hour
Carbon Monoxide (CO):	408.0 tpy	160.1 tpy
CO:	11.25 pounds/ Ton of metal charged	7.16 pounds/ Ton of metal charged
CO:	225 pounds per hour	122.26 pounds per hour
VOC:	13.6 tpy	0.5 tpy
VOC:	0.42 pounds/ Ton of metal charged	0.055 pounds/ Ton of metal charged
VOC:	8.4 pounds per hour	0.81 pounds per hour
Lead (Pb):	0.76 tpy	0.26 tpy
Pb:	0.02 pounds/ Ton of metal charged	0.0055 pounds/ Ton of metal charged
Pb:	0.4 pounds per hour	0.0865 pounds per hour
Arsenic:	0.0036 pounds per hour	0.00062 pounds per hour
Manganese:	0.87 pounds per hour	0.455 pounds per hour
PM or Total Metal HAP:	0.8 or 0.06 pounds per ton of metal charged	0.035 pounds of Total Metal HAPs per ton of metal charged

Compliance with the emission limits is demonstrated through stack testing and calculations based on emission factors developed during stack testing. Stack testing was completed November 9-11, 2021. Records of annual emissions indicate compliance with each of the limits.

II. Material Limits:

The sulfur content of the coke is limited to 2.5%, by weight. Based on the records reviewed, the most recent coke shipment was March 3, 2022. Based on the results of the coke shipments, provided by GLC, the sulfur content was 0.67%, which demonstrates compliance with the limit.

The facility is restricted to melting no more than 20 tons of metal per hour and 6,050 tons per month. Records maintained by GLC indicate that the highest melt rate observed was 20 tons per hour and 4,914.89 tons per month between March 1, 2021 through February 28, 2022, which demonstrates compliance with the limit.

III. Process/Operational Restrictions:

Emission control device operating parameters are specified in the ROP. At the time of the inspection I recorded the following operational parameters during the field inspection. The facility follows an O&M Plan, for the cupola venturi scrubber and the plan has daily, monthly and annual maintenance checks, and are recorded and kept onsite.

Parameter	Permit Limit	Actual (on Blast)
Venturi Delta P:	> 33 inches wc	51.0" wc
Venturi Flow:	> 200 gallons per minute (gpm)	273.8 gpm
Demister Delta P:	< 1.0 inches wc	0.273" wc
Demister Flow:	> 40 gpm	44.3 gpm
Quencher Flow:	> 200 gpm	236.1 gpm
Cupola Upper Stack Temp:	> 1150 degrees F	1339 degrees F

IV. Design/Equipment Parameters:
Devices to measure flow rate, pressure drop, and temperature across the various pieces of equipment were all installed and appeared to be operating properly.

V. Testing/Sampling:
The ROP requires testing for each of the pollutant limits every 5 years. The most recent test performed was to show compliance with the 40 CFR Part 63, Subpart ZZZZZ, which was completed on November 9-11, 2021 and demonstrated compliance with the associated emission limits.

VI. Monitoring/Recordkeeping:
Required monitoring within the ROP includes the charge weight and time and the ratio of iron to coke charged. Monitoring of these items is maintained electronically. The computer monitors the time and weight of each material charged to the cupola. The computer system is also set up so that the facility cannot exceed the 20 ton per hour melt rate limit. Records of monitored data were available at the time of the inspection and examples are attached. Inspection of the records demonstrates that the facility is maintaining the required records.

Additionally, the facility continuously monitors the flow rate of the quencher, the flow rate of the demister, and the upper stack temperature. They use the differential pressure and liquid flow rate data of the venturi scrubber and demister as well as the liquid flow rate of the quencher to determine continuous and proper operation of EUCUPOLA.

Records associated with CAM are also being kept and were available on request.

As previously stated, the facility monitors and records the sulfur content of each shipment of coke received.

The facility calculates monthly and 12-month rolling emissions for PM, PM-10, SO2, CO, VOC, and Pb using the most current stack test emission factors. As previously discussed above, the Cupola was operating within the permitted parameters. Any deviations to the operating established operating parameters are discussed below.

VII. Reporting:
The facility is required to report calendar year emissions to the AQD via the Michigan Air Emission Reporting System. The report was previously reviewed and documented. Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. Reporting associated with CAM was performed properly and was previously reviewed and documented. There were 3 deviaitons reported from January 2021 through December 2021, the deviations were acted on and repaired in a timely and adequate basis. There were no CAM monitor downtime or excursions/exceedances reported within semi-annual and annual reports. Additionally, reporting for 40 CFR Part 63, Subpart ZZZZZ was in compliance.

VIII. Stack/Vent Restrictions:
Stack parameters at the facility have not been modified and appear correct.

IX. Other Requirements:
There has been no need to modify the existing CAM plan.

EUCOLDBOXCORE: Cold box core machines with packed tower scrubber including ancillary core making equipment. This system is controlled by a sulfuric acid recirculating packed tower scrubber.

I. Emission Limits:
The facility is limited to 10 tons of VOC per year from this emission unit. Emissions are calculated using the resin manufacturer emission factor. Records (attached) indicate the 12 month rolling VOC emission rate was 0.61 tpy. The N, n-dimethylisopropanolamine (DMPA) limit is 0.50 tpy. The attached records indicate 12-month rolling DMPA emissions were 0.02 tpy. The ROP indicates that there must be no visible emissions from the emission unit. Records of visible emissions readings are maintained and indicate that no visible emissions were observed. I observed no visible emissions during the inspection.

II. Material Limits:
The emission unit is limited to using only 23,000 pounds of resin per calendar month. Based on the records reviewed, the highest amount per month of resin used from March 2021 through December 2021 was 11,461 pounds of resin, which is below the permitted limit.

III. Process/Operational Restrictions:
EUCOLDBOXCORE was operating during the inspection. The scrubber was operating with a pH of the scrubber at 0.26. The permit requires the scrubber liquid pH to be maintained below 4.5.

IV. Design/Equipment Parameters:
The pH meter on the scrubber was installed and appeared to be operating properly.

V. Testing/Sampling:
Non-certified visible emissions observations are required on a weekly basis, whenever the equipment is operating. Records of visible emissions readings are maintained and indicate that no visible emissions were observed. Observations made during the inspection also confirmed no visible emissions were present.

VI. Monitoring/Recordkeeping:
Records indicate that GLC is monitoring and recording the pH of the scrubbing liquor, the VOC and DMPA emissions from the emission unit, and the presence of any visible emissions as required by the permit.

The facility records the differential pressure on a daily basis when the scrubber is operating. The scrubber differential pressure was 3.9 inches water column (wc). According to Mr. Ellis, the visible inspections of the packed bed scrubber are required on a quarterly basis but happen more frequent then that.

VII. Reporting:
Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. No deviations were reported for EUCOLDBOXCORE from the two 2021 semi-annual reports.

VIII. Stack/Vent Restrictions:
Stack parameters at the facility have not been modified and appear correct.

IX. Other Requirements:
There are no other requirements for EUCOLDBOXCORE.

EUHUNTERPOURING: Iron pouring process of the Hunter line. There are five pouring lines for EUHUNTERPOURING, but the facility typically uses one to three of the five lines.

I. Emission Limits:
PM emissions are limited to 0.10 pounds per 1000 pounds of exhaust gases. Stack testing on October 19-21, 2021 demonstrated emissions were 0.0091 pounds per thousand pounds exhaust gas. Furthermore, the absence of visible emissions during the testing and the absence of visible emissions based upon observations by facility personnel indicate continuous compliance with the emission limit. I observed no visible emissions during the inspection.

II. Material Limits:
There are no material limits associated with EUHUNTERPOURING.

III. Process/Operational Restrictions:

The Hunter line has a pouring rate limit of 20 tons per hour. The highest average amount of metal poured from February 1, 2022 through March 31, 2022 was 10.71 tons poured per hour.

IV. Design/Equipment Parameters:
There are no design/equipment parameters for EUHUNTERPOURING.

V. Testing/Sampling:
As previously stated, the most recent stack test was completed October 19-21, 2021, and the facility was in compliance with the emission limits. The facility is required to complete stack testing every five years. The facility is required to perform non-certified visible emissions observations on a weekly basis when the emission unit is operating. Records of visible emissions readings are maintained and indicated no visible emissions were observed. I observed no visible emissions during the inspection.

VI. Monitoring/Recordkeeping:
Records of the amount of metal poured are being maintained.

VII. Reporting:
Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. No deviations for EUHUNTERPOURING were reported from the two 2021 semi-annual reports. Test protocols were submitted to the AQD within required timeframes.

VIII. Stack/Vent Restrictions:
There are no Stack parameter restrictions for EUHUNTERPOURING.

IX. Other Requirements:
There are no other requirements for EUHUNTERPOURING.

EUHUNTERSAND: Hunter line sand system controlled by the CSI Baghouse.

I. Emission Limits:
PM emissions from this emission unit are limited to 0.10 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis. Stack testing on October 19-21, 2021, demonstrated emissions were 0.0025 pounds per thousand pounds exhaust gas. The facility demonstrates continuous compliance with this limit by maintaining the differential pressure across the CSI baghouse within the 0.2 to 7 inches wc range specified in the MAP, and 1 to 6 inches wc range specified in the CAM plan. Based upon a review of the records, the differential pressure has ranged from 1.0 inches wc to 6.0 inches wc, and was observed at 3.0 inches wc at the time of the inspection.

II. Material Limits:
There are no material limits associated with EUHUNTERSAND.

III. Process/Operational Restrictions:
The facility is not allowed to operate the emission unit unless the CSI baghouse differential pressure is within the range specified in the MAP. As mentioned previously, the CSI baghouse was operating within the acceptable range.

IV. Design/Equipment Parameters:
A device to measure differential pressure across the baghouse was installed and appeared to be operating properly.

V. Testing/Sampling:
PM testing is required every 5 years. As previously stated, stack testing was completed October 19-21, 2021, and testing demonstrated compliance with the PM emissions limit.

VI. Monitoring/Recordkeeping:
The facility is required to continuously monitor the differential pressure across the baghouse and record the parameter once per day during operation. At the time of the inspection, the monitor was operating, and the differential pressure was 3.0 inches wc. Based on the records reviewed, no malfunctions, excursions or exceedances of the monitoring data were documented.

VII. Reporting:

Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. There was one deviation reported from January 2021 through December 2021, the deviation was acted on and repaired in a timely and adequate basis. Reporting associated with CAM is being performed properly and was previously reviewed and documented. No monitor downtime, excursions or exceedances were reported to the AQD within the past year of this inspection report. Test protocols were submitted to the AQD within required timeframes.

VIII. Stack/Vent Restrictions:
There are no stack parameters nor vent restrictions for EUHUNTERSAND

IX. Other Requirements:
There has been no need to modify the existing CAM plan.

EUHUNTERMOLDCOOL: Hunter line mold cooling. No control equipment is associated with this emission unit.

I. Emission Limits:
This emission unit is limited to 0.10 pounds of particulate per 1,000 pounds of exhaust gases. Compliance with this limit is based on non-certified visible emission readings. Records of these readings are attached to this report and demonstrate zero visible emissions. No visible emissions were noted during the inspection.

II. Material Limits:
There are no material limits associated with EUHUNTERMOLDCOOL.

III. Process/Operational Restrictions:
There are no process nor operational restrictions for EUHUNTERMOLDCOOL.

IV. Design/Equipment Parameters:
There are no design nor equipment parameters for EUHUNTERMOLDCOOL.

V. Testing/Sampling:
The facility is required to perform non-certified visible emissions observations on a weekly basis when the emission unit is operating and conduct Method 9 readings if any visible emissions are observed. Records of visible emissions readings are maintained and indicate that no visible emissions were observed. I observed no visible emissions during the inspection.

VI. Monitoring/Recordkeeping:
Records of visible emissions readings are maintained and indicate that no visible emissions were observed. I observed no visible emissions during the inspection.

VII. Reporting:
Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. No deviations were reported for EUHUNTERMOLDCOOL from the two 2021 semi-annual reports.

VIII. Stack/Vent Restrictions:
Stack parameters at the facility have not been modified and appear correct.

IX. Other Requirements:
There are no other requirements for EUHUNTERMOLDCOOL.

EUEASTCOREOVEN: East core oven and associated equipment. No pollution control is associated with this emission unit.

I. Emission Limits:
The ROP states that there shall be no visible emissions from the core oven. At the time of the inspection, I observed no visible emissions from the oven stack.

II. Material Limits:
There are no material limits associated with EUEASTCOREOVEN.

III. Process/Operational Restrictions:
There are no process nor operational restrictions associated with EUEASTCOREOVEN.

IV. Design/Equipment Parameters:
There are no design nor equipment parameters associated with EUEASTCOREOVEN.

V. Testing/Sampling:
The facility is required to perform non-certified visible emissions observations on a weekly basis when the emission unit is operating. Records of visible emissions readings are maintained and indicate that no visible emissions were observed. I observed no visible emissions during the inspection.

VI. Monitoring/Recordkeeping:
There are no monitoring nor recordkeeping requirements for EUEASTCOREOVEN.

VII. Reporting:
Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. Ne deviations were reported for EUEASTCOREOVEN from the two 2021 semi-annual reports.

VIII. Stack/Vent Restrictions:
Stack parameters at the facility have not been modified and appear correct.

IX. Other Requirements:
There are no other requirements for EUEASTCOREOVEN.

EUDISAEWETDC: Disamatic line shakeout and return mold sand system operations controlled by the east wet dust collector.

I. Emission Limits:
The ROP emission limits for PM-10 are 0.10 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis, and 64.8 tpy. Demonstration of compliance is through stack testing and non-certified visible emissions readings. The facility performed stack testing October 19-21, 2021, which demonstrated PM-10 emissions were 0.030 pounds per 1000 pounds of exhaust gases, and records showed PM-10 was at 15.5 tons per year and within permitted limits.

The East Wet Dust Collector controls emissions from DISA line cooling, most of the shakeout, and sand reclaim. Opacity from the East Wet Dust Collector is limited to 5% during normal operation and 20% during cleaning of the dust collector. This is demonstrated though weekly non-certified VE's. Records of these are being kept and are attached.

II. Material Limits:
There are no material limits associated with EUDISAEWETDC.

III. Process/Operational Restrictions:
The wet dust collector was in operation at the time of the inspection with a flow rate of 159 gallons per minute (gpm). The MAP specifies a normal operating range of 100 – 300 gpm and the CAM Plan requires 150 – 275 gpm.

Operation of the emission unit is also limited to 6,000 hours per year, and based on the records reviewed, the highest hours operated until the end of December 2021 was 4,837 hours and operates around 320 to 465 hours per month.

IV. Design/Equipment Parameters:
A device to measure flow through the collector was installed and was operating properly as demonstrated by compliant flow rate and no visible emissions present.

V. Testing/Sampling:
The facility performed stack testing October 19-21, 2021, which demonstrated PM-10 emissions were 0.030 pounds per 1000 pounds exhaust gases.

The facility is also required to perform non-certified visible emissions observations on a weekly basis when the emission unit is operating. Records of visible emissions readings are maintained and indicate that no visible emissions were observed. I observed no visible emissions during the inspection.

VI. Monitoring/Recordkeeping:

The facility is required to continuously monitor and record the liquid flow rate once per day through the collector during operation. Inspection of EUDISAEWETDC, the monitor was installed and operating, and records indicated that the flow rate was recorded on a daily basis. Based on the records reviewed from March 2021 through March 2022, the flow rate through this collector was between 150-192 gpm. Based on the records reviewed, no malfunctions, excursions or exceedances of the monitoring data were documented. The records are attached.

VII. Reporting:
Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. Reporting associated with CAM is being performed properly and was previously reviewed and documented. No monitor downtime, excursions or exceedances were reported to the AQD within the past year of this inspection report. Test protocols were submitted to the AQD within required timeframes.

VIII. Stack/Vent Restrictions:
Stack parameters at the facility have not been modified and appear correct.

IX. Other Requirements:
There has been no need to modify the existing CAM plan.

EUEMER-GEN: Existing Spark ignition (SI) emergency reciprocating internal combustion engine (RICE) less than 500 HP at an area source for HAPs, as identified within 40 CFR, Part 63, Subpart ZZZZ, 63.6590(a)(1). EUEMER-GEN is not connected to the public electrical grid and is only used to provide a backup to supply power internally. At the time when this Emission Unit was permitted, the facility supplied the Conditions in accordance with 40 CFR, Part 63, Subpart ZZZZ (RICE MACT) since AQD did not have delegation over the RICE MACT. Therefore, AQD did not review this portion of the ROP.

FGDISALINE: This Flexible Group includes the: Hunter line mold cooling, shakeout, return mold sand system, and sandmulling (associated with EUHUNTERDUSTAR); Disamatic line pouring, mold cooling, and sand mulling operations (associated with EUDISADUSTAR); and sample shot blast unit (associated with EUOTHERDUSTAR). This flexible group is controlled by the Dustar Baghouse.

I. Emission Limits:
The ROP emission limits for PM-10 are 0.0205 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis and 7.5 tpy for EUDISALINE, 6.5 tons of PM-10 per year for EUDISASUSTAR, and 3.6 tons of PM-10 per year for EUOTHERSTAR. The emission limits for VOCs are 14.0 pounds per hour and 42 tpy for EUDISASTAR. The emission limits for formaldehyde were 2.0 milligrams per cubic meter. Demonstration of compliance is through stack testing, through calculations using emission factors derived from stack testing, and via non-certified visible emissions readings. The facility performed stack testing October 19-21, 2021, which demonstrated PM-10 emissions were 0.0028 pounds per 1000 pounds of exhaust gases. The VOC emissions were 1.41 pounds per hour, and the formaldehyde emissions were 0.151 milligrams per cubic meter. Based on the records reviewed, emissions for FGDISALINE was 1.7 tons of PM-10 per year and 17.1 tons of VOC per year. The pollutants for FGDISALINE were within permitted limits.

The Dustar Baghouse controls emissions from FGDISALINE. Opacity from the Dustar Baghouse is limited to 5% during normal operation. This is demonstrated though weekly non-certified VE's. Records of these are being kept and are attached.

II. Material Limits:
There are no material limits associated with FGDISALINE.

III. Process/Operational Restrictions:
The Dustar Baghouse was in operation at the time of the inspection with a differential pressure of 2.8 inches wc. The MAP specifies a normal operating range of 0.2 to 7.0 inches wc and the CAM Plan indicates proper function of the baghouse between 1.0 inches to 6.0 inches wc. Based on the daily records reviewed for the months of March 2021 – March 2022 the Dustar Baghouse ranged between 1.0 – 4.0 inches wc.

IV. Design/Equipment Parameters:
A device to measure the differential pressure across the baghouse was installed and was operating properly as demonstrated by compliant differential pressure readings and no visible emissions present.

V. Testing/Sampling:

The facility performed stack testing October 19-21, 2021, which demonstrated compliance with the PM-10, VOC, and formaldehyde emission limits.

The facility is also required to perform non-certified visible emissions observations on a weekly basis when the emission unit is operating. Records of visible emissions readings are maintained and indicate that no visible emissions were observed. I observed no visible emissions during the inspection.

VI. Monitoring/Recordkeeping:
The facility is required to continuously monitor and record the differential pressure once per day across the baghouse. Inspection of the emission unit concluded that the gauge was installed and operating and records indicate that the differential pressure is recorded. Based on the records reviewed, no malfunctions, excursions or exceedances of the monitoring data were documented.

Records associated with PM-10, VOC, and formaldehyde emission calculations are maintained and demonstrate compliance with the emission limits. The records are attached.

VII. Reporting:
Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. Reporting associated with CAM is being performed properly and was previously reviewed and documented. No monitor downtime, excursions or exceedances were reported to the AQD within the past year of this inspection report. Test protocols were submitted to the AQD within required timeframes.

VIII. Stack/Vent Restrictions:
Stack parameters at the facility have not been modified and appear correct.

IX. Other Requirements:
There has been no need to modify the existing CAM plan.

FGCLEAN&FINISH: This Flexible Group includes Shot blast machine used to clean castings prior to finishing (associated with EUCLEANING) and casting finishing process using grinding wheels (associated with EUFINISH). This flexible Group is controlled by the AAF baghouse.

I. Emission Limits:
PM-10 emissions are limited to 0.10 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis. Compliance with this emission limit is ensured by proper installation, operation and maintenance of the AAF baghouse.

II. Material Limits:
There are no material limits associated with FGCLEAN&FINISH.

III. Process/Operational Restrictions:
The ROP requires that the baghouse be installed and operating properly and that the differential pressure across the baghouse is within the normal operating range. At the time of the inspection, the differential pressure of the AAF baghouse was 4.9 inches wc, which is within the approved range specified in the MAP of 0.2 to 7.0 inches wc, and 1 to 6 inches wc as specified in the CAM plan.

IV. Design/Equipment Parameters:
A device to measure pressure drop was installed and appeared to be operating properly.

V. Testing/Sampling:
The facility is required to perform non-certified visible emissions observations on a weekly basis when the emission unit is operating and conduct Method 9 readings if visible emissions are detected. Records of visible emissions readings are maintained and indicate that no visible emissions were observed. I observed no visible emissions during the inspection.

VI. Monitoring/Recordkeeping:
The differential pressure gauge was installed and operating at the time of the inspection. Daily records reviewed for the months of March 2021 through March 2022, demonstrate that the differential pressure is recorded at least once per day during operation as required by the ROP. Based on the records reviewed, the differential pressure ranges between 2.3 to 5.8 inches wc. At the time of the inspection the differential pressure was 4.9 inches wc.

VII. Reporting:

Semi-annual deviation reports and annual certifications of compliance were previously reviewed and documented. Reporting associated with CAM is being performed properly and was previously reviewed and documented. No monitor downtime, excursions or exceedances were reported to the AQD within the past year of this inspection report. Test protocols and completed test reports were submitted to the AQD within required timeframes.

VIII. Stack/Vent Restrictions:

There are no stack/vent restrictions associated with FGCLEAN&FINISH.

IX. Other Requirements:

There has been no need to modify the existing CAM plan.

FGCOLDCLEANERS:

This flexible group includes any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(2)(h) or Rule 285(2)(r)(iv), existing cold cleaners that were placed into operation prior to July 1, 1979, and new cold cleaners that were placed into operation on or after July 1, 1979. There were previously two small cold cleaners at the facility, however, EUCOLDCLEANERF has been removed from the facility, and EUCOLDCLEANERM is not currently in operation. According to Mr. Anderson, he would prefer to leave FGCOLDCLEANERS in the ROP, in case they decide there is a need to use them again.

FGRULE290:

This flexible group covers EURIAPPLICATION, EUPATTERNMAKING, EUSHELLCORE, EUCOREWASH. GLC maintains material VOC content and use records that demonstrate emissions for each emission unit are below the Rule 290 thresholds.

NAME _____ DATE _____ SUPERVISOR _____ 2022.08.31 09:48:22 -04'00'